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INTERACTIVE MEETING

22-23 OCTOBER 2020 | 18.00 – 20.00 CET
12-13 NOVEMBER 2020 | 18.00-20.00 CET
10-11 DECEMBER 2020 | 18.00 – 20.00 CET

ABSTRACT BOOK

1 - THE EFFECTS OF OESTROGEN ON VAGINAL WOUND HEALING: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION AND AIM OF THE STUDY

Postmenopausal women with pelvic floor pathology may benefit from vaginal oestrogen therapy. A reduction of symptoms has been described in women with vaginal atrophy, stress urinary incontinence, overactive bladder, and recurrent cystitis when prescribed vaginal oestrogens.[1] It is suggested that oestrogen therapy may also play an important role in the surgical treatment of pelvic organ prolapse (POP). Surgery for POP is associated with high recurrence rates of up to 50%.[2] We hypothesise that the surgical outcomes of POP are negatively affected by impaired wound healing in postmenopausal women and that treatment with vaginal oestrogen may enhance wound healing and improve surgical outcomes. With regard to POP surgery, wound healing is essential to re-establish tissue integrity and to restore functional, strong tissue in order to keep the pelvic organs in place and avoid recurrence of POP.
Oestrogen and its derivatives are already known for their positive effects on cutaneous wound healing.[3] However, not much is known about the effects of oestrogen on vaginal wound healing specifically. Therefore, as a first step, we systematically reviewed the literature to determine the effects of oestrogen on vaginal wound healing after vaginal surgery. Improved understanding of these effects may provide further opportunities to develop oestrogen-related therapies to improve the outcome of vaginal surgery.

MATERIALS AND METHODS

This systematic review was reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement and was prospectively registered in PROSPERO (CRD42019156601).
An information specialist performed a systematic search in OVID MEDLINE, OVID EMBASE and Web of Science from inception to 28 January 2020 using controlled vocabulary (including MeSH-terms) and text words to retrieve both animal and human studies on the effect of oestrogen or oestrogen deprivation on vaginal wound healing. Reviews, editorials, and conference abstracts were excluded. We applied no language or date restrictions. Reference lists and citing articles of identified relevant papers were crosschecked for additional relevant studies using Web of Science.
2 reviewers independently selected studies, assessed bias, and extracted data. All original studies that compared wound healing related outcomes of oestrogen exposed subjects to hypo-oestrogenic subjects after vaginal surgery were eligible. Subjects were female animals and women. Wound healing related outcome measures were classified into the three phases of wound healing: (1) inflammatory phase, (2) proliferative phase, (3) and maturation phase. The standardised mean difference (SMD) and 95% confidence intervals were assessed by random-effects models with Hedges' g correction between intervention and control groups. Risk of bias was assessed using the Cochrane risk of bias tool for human studies and the SYRCLE risk of bias tool for animal studies.

RESULTS

The systematic literature search yielded 1474 unique references of which 14 studies were included in the systematic review and 11 studies were eligible for meta-analysis. The study characteristics varied considerably. The included studies consisted of 2 human studies, compromising 197 women, and 12 studies comprising 795 rats, 378 rabbits, 24 guinea pigs and 4 canines. More than 10 different surgical techniques were used and vaginal wounds varied in size and location. Also type of oestrogen, administration route, dosage, frequency, timing and duration of oestrogen therapy varied between studies. In 2 studies, oestrogen was administered preoperatively, in 6 studies postoperatively, and in 5 studies oestrogen was administered both pre- and postoperatively. The median duration of oestrogen therapy was 14.3 days (inter quartile range 6.8 - 19.3). 5 studies included physiologic oestrogen as part of oestrogen therapy. 11 studies used exogenous oestrogens, which were administered subcutaneously (5 studies), systemically (3 studies); and vaginally (4 studies).
Risk of bias assessment demonstrated that in particular animal studies reported poorly on important methodological details such as randomization and blinding (Figure 1).
Meta-analysis demonstrated that oestrogen increased neovascularization (SMD 1.13 [0.67 – 1.60]) and granulation tissue formation (SMD 1.67 [0.54 – 2.79]), accelerated wound contraction (SMD 1.82 [1.22 – 2.42]) and re-epithelialisation (SMD 0.98 [0.66 – 1.29]), improved collagen synthesis (SMD 1.08 [0.42 – 1.74]), and

increased tissue strength (SMD 1.26 [0.53 – 1.99]). Oestrogen decreased the inflammatory response (SMD -0.58; [-1.14 – -0.02]) and reduced levels of TGF-β1 (SMD -1.68 [-2.52 – -0.83]) (Table 2).

CONCLUSIONS

This systematic review and meta-analysis provide convincing evidence that oestrogen therapy has a beneficial effect on vaginal wound healing after vaginal surgery. Therefore, in particular postmenopausal women may benefit from perioperative oestrogen therapy by improved vaginal wound healing, which may ultimately also improve surgical outcomes.

The outcomes of this study justify further research evaluating the effect of oestrogen-induced improved vaginal wound healing on surgical outcomes, such as recurrence rates of POP, vaginal health, quality of life and sexual function, but also implant related complications such as mesh exposure and erosion. Future research should preferably use vaginal oestrogens and aim to define the optimal dosage, timing, and duration of oestrogen treatment to improve surgical outcome.

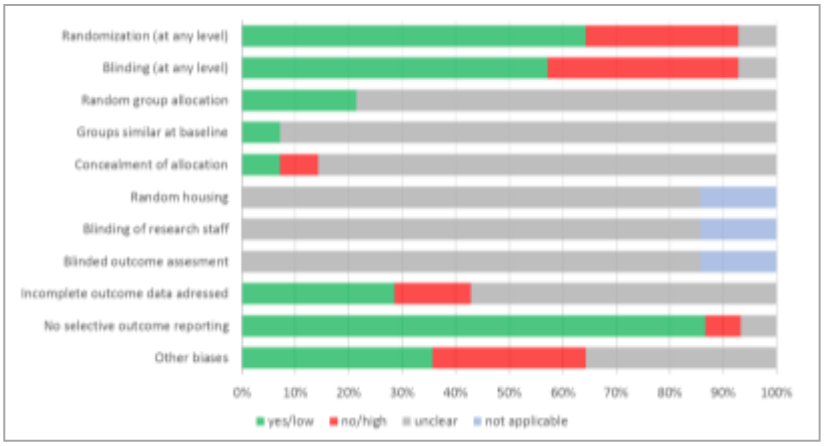

Figure 1: Risk of Bias assessment of 14 studies included in this systematic review

Outcome	SMD (Hedges' g)	CI	Heterogeneity
Inflammatory response	-0.58	-1.14 ; -0.02*****	53%
TGF- β1	-1.68	-2.52 ; -0.83*****	72%
Neovascularization	1.13	0.67 ; 1.60*	23%
Granulation	1.67	0.54 ; 2.79*	83%
Wound contraction	1.82	1.22 ; 2.42*	67%
Re-epithelialisation	0.98	0.66 ; 1.29*****	28%
Collagen synthesis	1.08	0.42 ; 1.74*****	70%
Tissue strength	1.26	0.53 ; 1.99*	75%

Table 1: SMD (Hedges' g) with 95% confidence intervals (CI) and heterogeneity of wound healing related outcome measures. * significant difference.

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2 - MULTICENTRE REGIONAL COMPLICATION ANALYSIS IN ROGYNAECOLOGIC SURGERY

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INTRODUCTION AND AIM OF THE STUDY

Complication rates in pelvic organ prolapse (POP) surgery varies in literature between 3.2 and 15,5%[1]. In the Netherlands approximately 13.000 urogynaecological procedures are performed each year[2]. In order to improve patient care, to enhance our performances and to diminish complications, we pooled data off one year on complications in prolapse and incontinence surgery of 6 hospitals in one region of the Netherlands.

MATERIALS AND METHODS

We collected all data on POP and incontinence surgery performed in 2019 in 6 teaching and non-teaching hospitals in the Netherlands. The following procedures were included: anterior and posterior colporrhaphy, Manchester-Fothergill, laparoscopic sacrocolpopexy, sacrospinous ligament fixation, mid urethral sling placement, colpocleisis and vaginal hysterectomy. All per- and postoperative complications were analyzed.

RESULTS

A total of 1185 procedures in participating hospitals were analyzed. In 93,6% (1106 procedures) no complications occurred and in 14,3% (169 procedures) we noted a complication. There were 182 complications in 169 (15,4%) patients. Figure 1 shows the overall distribution of the complications, Urinary tract infection (n=76, 42%,) treated with antibiotics and urinary retention (n=70, 38%) with the need for intermittent catheterization or for an indwelling catheter, were the majority of complications. Per- or postoperative bleeding was seen in 16 cases (9%), with need for transfusion in 1 case and recurrent surgery in 5 cases. The remaining 11% were other complications, e.g. infection, pain, flebitis and pyometrium. The incidence of complications between the participating hospitals varied from 5.4% to 21%. Further analysis of complications per surgery type (figure 2.), showed that the majority of complications occurred in the Manchester-Fothergill procedure (46%), followed by the sacrospinous ligament fixation (17%) and the laparoscopic sacrocolpopexy (17%). The least complications occurred in the anterior and posterior colporrhaphy (13%), vaginal hysterectomy (12%) and colpocleisis (7%). After analysis a regional complication meeting was convened to discuss our regional results and to evaluate 8 rare complications with the gynecologists of all the hospitals.

INTERPRETATION OF RESULTS

The overall complication rate in the region was 14% with a spread from 5 to 20%. This spread is probably due to incomplete registration. Our complication rate is comparable with rates described in literature[1]. The majority of complications included minor complications as urinary tract infection and urinary retention. Because we pooled a large number of data, multiple rare complications were noticed and discussed.

CONCLUSIONS

Multicenter analysis reveals that severe complications after POP and urinary incontinency surgery is rare. This regional collaboration gives us the opportunity to compare complications in POP and incontinence surgery in a large cohort of patients and to evaluate the impact of differences in peri- and postoperative protocols. Regional procedure and protocol adjustments have been made and to ensure better registration we have made adjustments in the complication registration protocol. All hospitals agreed to share their data in 2020 again and more hospitals are invited. Recurrent regional analysis support us to improve the care for our patients and can be an example to other regions where collaboration is pivotal to improve patient care in POP and urinary incontinency surgery.

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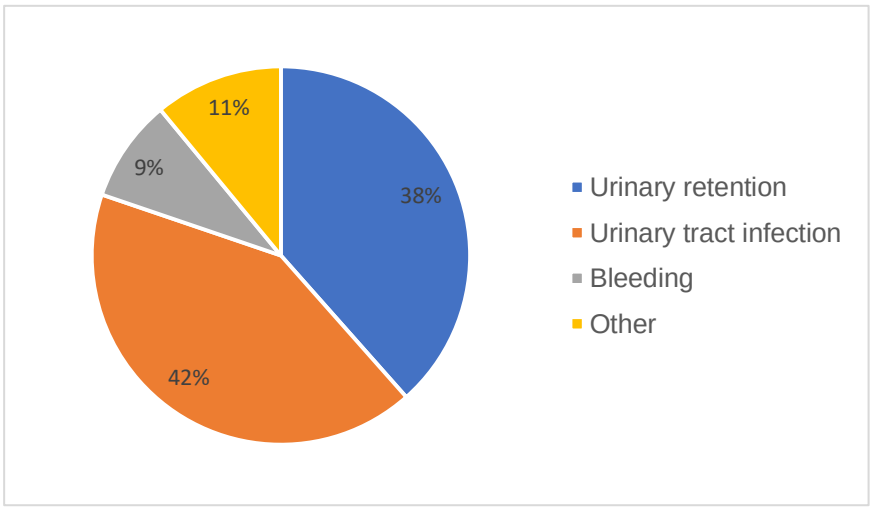

Figure 1: Overall distribution of complications

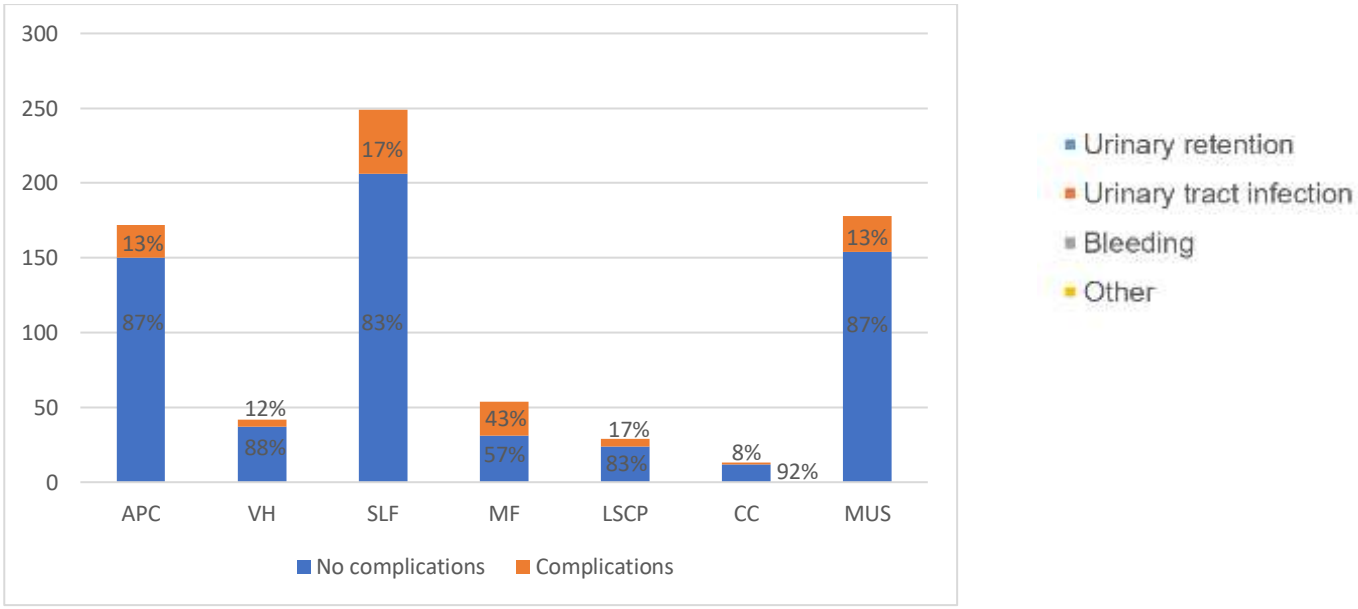

Figure 2: Complications per type of surgery. APC:anterior and posterior colporrhaphy, VH: vaginal hysterectomy, SLF: sacrospinous ligament fixations, MF: Manchester-Fothergill, LSCP: laparoscopic sacrocolpopexy, CC: colpocleisis, MUS: mid urethral sling.

3 - LONG-TERM OUTCOME AFTER ROBOTIC–ASSISTED LATERAL SUSPENSION AND ROBOTIC-ASSISTED SACRAL SUSPENSION: A RETROSPECTIVE COHORT STUDY

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INTRODUCTION AND AIM OF THE STUDY

Apical defect is a major therapeutic challenge for pelvic reconstructive surgery(1). Abdominal approach seems to be the right choice for apical prolapse repair with better anatomic and perioperative outcomes respect to vaginal surgery (2). The aim of this study is to compare outcomes and complication rate from two different cohorts of patients treated with robotic assisted lateral suspension (RALS) and robotic assisted sacral suspension (RASC) for advanced apical defect correction.

MATERIALS AND METHODS

This is a restrospective two-cohort study. We involved data from two cohorts of patients who underwent robotic surgery between 2014 and 2018: 134 RALS and 100 RASC. We selected patients with a minimum follow- up of 2 years; the median postoperative follow-up was 44.37±16 months for both cohorts. Clinical evaluation was performed with a simplified POP-Quantification system (POP- Q). Apical defect cure rate was the first primary outcome. The anatomic impact for anterior and posterior compartment was the secondary primary outcome. Anatomic objective cure was defined satisfactory as POP-Q ≤1 and surgical failure as POP-Q stage ≥II. Subjective cure was the third primary outcome and was defined as the absence of sensation of vaginal bulge. Secondary outcomes were reoperation rate for symptomatic recurrence, erosion rate and complications. Patient's quality of life was assessed with a post hoc prolapse quality of life questionnaire (P-QOL) that the patients filled at a certain point in time since the primary surgery.

RESULTS

The objective cure rate for apical defect was 88.5% for RALS and 88.2% for RASC at a medium follow-up of 44.37±16 months (p=0.999). The comparison of apical cure rate is shows in a Kaplan-Meier analysis in Figure 1. We showed a better clinical improvement rate for anterior compartment in the RALS group vs RASC group (80.7% vs 68.3%, p< 0.0658). Posterior compartment cure rate was 87% in RASC series of, over 3 years of follow-up. The emergence of de novo symptomatic high rectoceles was not significant in RALS cohort. No patient had major postoperative complications (Clavien- Dindo grade ≥3b) in both groups. Mesh complication rate was 0.7% and 1% in RALS and RASC group. Overall, subjective cure rate in terms of absence of vaginal bulge was 89.4 vs 88.3%, respectively. Post-operative P-QOL did not differ between groups in any subscales, showing an improvement of quality of life.

INTERPRETATION OF RESULTS

Our comparative analysis shows that abdominal POP repair with robotic approach to lateral suspension and sacral suspension are feasible, safe and highly effective techniques in treating apical defect. The best surgical approach for POP correction must be individualized according the other prolpse defects and according the anatomical characteristics.

CONCLUSIONS

Both lateral suspension and sacral suspension are safe and highly effective approach in treating apical defect. More research in this field is mandatory. Future prospective randomized studies are needed to confirm the evidence in the field of best clinical strategy for treating complex POP.

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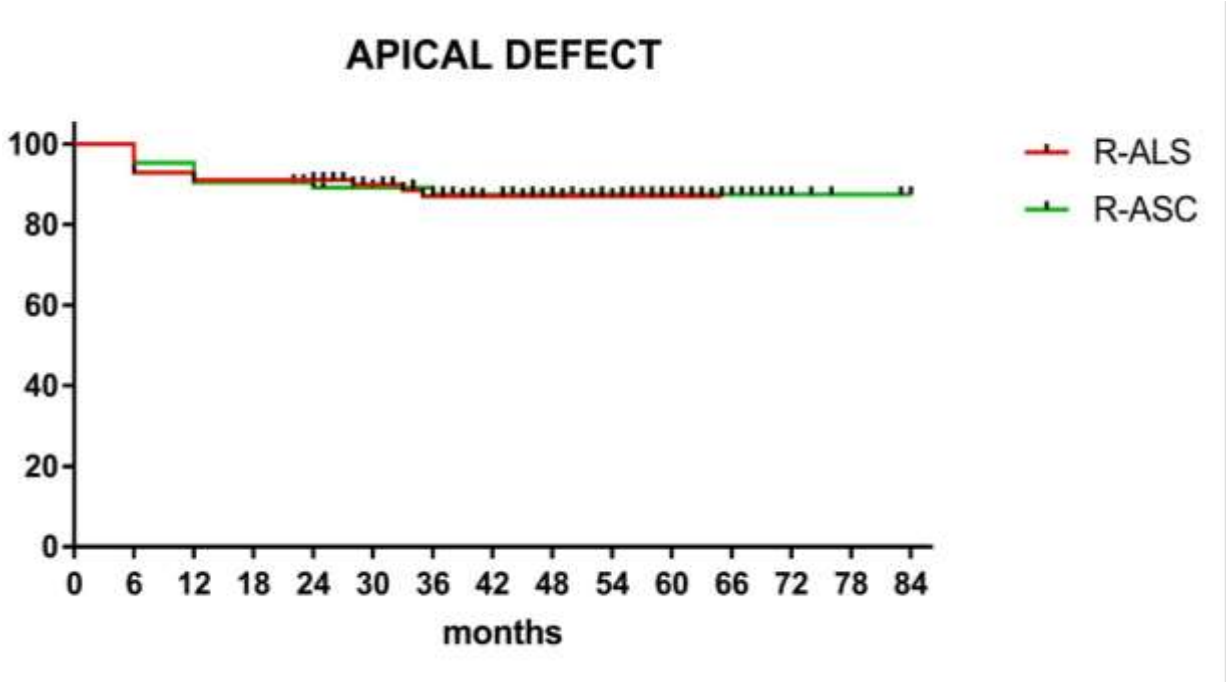
Figure 1 Survival curve rate in months after surgery in the apical defect. Kaplan-Meier survival analysis of R-ALS (n = 113) and R-ASC (n = 85). Comparison of survival curves using log-rank (Mantel-Cox) test. P values is 0.9856.Figure 1 Survival curve rate in months after surgery in the apical defect. Kaplan-Meier survival analysis of R-ALS (n = 113) and R-ASC (n = 85). Comparison of survival curves using log-rank (Mantel-Cox) test. P values is 0.9856.



4 - LONG TERM FOLLOW-UP OF VAGINAL MESH SURGERY FOR PELVIC ORGAN PROLAPSE AND TREATMENT OF COMPLICATIONS IN A TERTIARY CARE CENTER.

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INTRODUCTION AND AIM OF THE STUDY

Pelvic organ prolapse (POP) is a frequent condition in women, diagnosed in up to 50% of parous women, with a lifetime prevalence of surgery of approximately 11%. Since 2002 POP repair by synthetic vaginal mesh became available as an alternative for native repair using fascia plication techniques. Early reports were positive, describing better anatomical repair and less prolapse recurrence with mesh. However, the FDA published warnings for mesh complications in 2008 and 2011. The classification of vaginal mesh was altered to class 3 in 2016, and in 2019 the FDA ordered an immediate halt to producing and selling vaginal mesh products because of lack of safety and effectiveness studies. Meanwhile in Europe the use of vaginal mesh is also decreasing or stopped completely, as is the case in the UK.

Despite less usage in recent years, many patients have had vaginal mesh surgery (up to 100.000 patients in the USA in 2010 alone according to FDA numbers). For these patients, it is important to know the risk of complications and their optimal management.

The most common complication is partial exposure of the mesh, occurring in 4-19% of patients[2]. A more serious complication is mesh contraction, which can give rise to pain and dyspareunia. Removal of the whole mesh is often necessary. The exact risk for this serious complication is unknown.

The aim of this study was to perform an effectiveness study, therefore investigating the number and nature of complications, both short and long term, arising from treatment with synthetic vaginal mesh, performed by a specialized team. We therefore report the results of all consecutive cases of vaginal mesh surgery in our center and their complications.

MATERIALS AND METHODS

We conducted an observational single-center study in a cohort of 103 patients with genital prolapse (POP-Q stage ≥2 in ≥1 compartment) who underwent surgery by synthetic vaginal mesh from January 2010 to February 2014. POP was treated by synthetic vaginal mesh, either anterior, posterior or combined, based on the severity of prolapse in each compartment. Three brands of synthetic mesh were used: Prolift™ (Johnson&Johnson, New Brunswick New Jersey), Elevate™ (Astora, Eden Prairie, Minnesota) and Nuvia™ (Bard Medical, Covington, Georgia).

No incontinence surgery was performed at the time of prolapse repair, even when women suffered from symptomatic SUI. This enabled us to assess the effect of mesh repair on SUI, the resulting postoperative rate of SUI and need for specific incontinence surgery.

Anatomical cure was defined as POP-Q stage<2 in the operated compartment(s), subjective cure as relief of symptoms. Both were determined at each visit, with first visit minimally 3 months after surgery. Follow-up occurred every 3 months up to 1 year, afterwards yearly. Complications were documented and their treatment described. Date were analyzed using SPSS.

RESULTS

103 patients underwent surgery, of which 94 had a minimal follow-up of 3 months, with median follow-up of 5 years (range 3-115 months). At the end of follow-up, subjective cure rate was 91,4% and anatomical cure rate 85,1%. Five patients were operated for recurrent prolapse (5,3%). De novo prolapse (in another than the operated compartments) was noted in 11 patients.

Partial mesh erosion occurred in 16 patients (17%), with 8 (8,5%) minimal erosions, cured in-office under local anesthesia (Clavien-Dindo grade IIIa). Three patients (3,2%) underwent an intervention under general anesthesia for large mesh erosion, one of them had an erosion into the urethra (this patient had also had a cure of erosion under local anesthesia 9 years earlier). Five others (5,3%) had a cure of erosion in concurrence with other interventions (mainly TVT-O) (Clavien-Dindo grade IIIb). Four patients (4,2%) had recurrence of erosion. Six patients (6.4%) suffered from pain (1 temporarily due to a hematoma, 4 cases of minor pain with

movement, and one case of dyspareunia and dysuria which was then lost to follow-up) (Clavien-Dindo grade I).

77% (36/47) of patients preoperatively suffering from masked or symptomatic SUI did not need incontinence treatment after mesh surgery (Table 2).

	No postoperative SUI	**Persistent SUI**	
		No TVT-O	TVT-O
Preoperative symptomatic SUI (24)	16 (66.7%)	2 (8.3%)	6 (24%)
Preoperative masked SUI (23)	18 (78%)	0	5 (22%)
Total	34 (72.3%)	2 (4.3%)	11 (23.4%)

Table 2: comparison between preop and postop SUI

INTERPRETATION OF RESULTS

Cure rates of our study are high and comparable to other studies with vaginal mesh[3]. The decline of efficacity with time is slight and was expected.

The FDA reports warned about serious complications with vaginal mesh, however in this study with inclusion of over 100 patients, there were no patients with mesh contraction or need for total mesh removal for pain. Moreover, only 3% of patients had need for repair of exposure under general anesthesia. The rate of mesh exposure is comparable with other studies who report 4-19% exposure[2]. Mesh erosion can occur even after an extended period (9 years in one of our cases). Of notice, half of these exposures could be cured in-office. However, a total complication rate of 23% is too high to recommend vaginal meshes as a first-line treatment.

Interestingly, more than two thirds of the patients with preoperative SUI did not present urinary incontinence after prolapse surgery. In other studies, concomitant incontinence surgery has been routinely performed if SUI was present. According to our results, this implies that up to 72% of those patients may receive unnecessary incontinence treatment. If the placement of a vaginal mesh is deemed useful, we recommend not to routinely combine it with incontinence surgery. These results cannot be extrapolated to native tissue repair without further prospective studies.

CONCLUSIONS

Vaginal mesh surgery is effective for genital prolapse, although because of a substantial complication rate (mainly erosion) it cannot be recommended for primary prolapse repair. However, most of these complications can be managed easily. Based on our data, we recommend follow-up on a yearly basis for all patients with vaginal mesh. Nowadays, vaginal mesh surgery should be considered only for failed primary surgery or in clinical trials. Information of complication and repeat surgery is primordial.

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5 - A DELPHI STUDY FOR THE DEVELOPMENT OF A WEB-BASED DECISION AID FOR THE TREATMENT OF SYMPTOMATIC PELVIC ORGAN PROLAPSE

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INTRODUCTION AND AIM OF THE STUDY

Female pelvic organ prolapse (POP) is a common problem among women. The prevalence in The Netherlands ranges from 8.4 to 11% in women aged 45-85 years.[1] Pelvic floor muscle training (PFMT), pessary and surgery are effective treatment options for symptomatic POP. The lack of randomized controlled trials in this field makes any comment on the best treatment option speculative. Therefore, the chosen treatment option still depends on the preference of both the patient and the doctor. Shared decision making (SDM) appears to be very important in this situation as patients reporting to have participated in the process tend to have better affective and cognitive outcomes.[2] Decision aids (DA's) can be very helpful to involve patients and make them feel more knowledgeable, more clear about their values and better informed..[3]

The aim of this study was to develop a web-based DA for the treatment of patients with a symptomatic prolapse of the pelvic organs.

MATERIALS AND METHODS

To develop this DA an online Delphi consensus procedure and a usability test were performed. Two groups of experts (clinicians and patients) rated their (dis)agreement concerning a list of statements using a 5-point-likert scale, ranging from 1 (not important) to 5 (very important). The statements for clinicians were presented in four different categories: decision aid, usability and applicability, risk and side effects and value clarification exercises (VCE's). The VCE's are exercises patients can use to become more aware of the aspects of the treatment of POP which are most important for them (figure 1). The statements for patients considered information provision and the decision aid. Consensus that a statement is important was reached by a median ≥4. Consensus that a statement was not important was reached by a median <3. In addition to the Delphi procedure a usability test for both patients and clinicians was applied.

RESULTS

In the group of clinicians, consensus was reached in 38 out of the 44 statements (86%). In the patient group, consensus was reached in 11 of the 13 statements (85%). Experts agreed on the importance of providing the DA to any patient who has to make a treatment decision. Treatment options that should be included in the DA are: expectant management (including PFMT), pessary and surgery. No consensus was reached on whether the decision aid should give an advice on treatment. The usability test yielded positive feedback regarding the understandability, usability, images, the amount of information on the DA and the VCE's. Lack of information regarding sexuality was mentioned by both patients and clinicians and several words and phrases were noted differently.

INTERPRETATION OF RESULTS

The high consensus rate which was reached for both groups shows that the experts agree to a great extent with the content and applicability of the DA. Due to this degree of consensus it was decided to not perform second Delphi round, as is common in the development of other decision aids. Both patients and clinicians showed strong preference for the use of a DA in the decision-making process.

CONCLUSIONS

We developed a Dutch online decision aid for patients with symptomatic POP (figure 2). This DA informs patients by giving an overview on the treatment options including the advantages and disadvantages of each option and clarifies patient preferences by using VCE's. The DA was optimized to the needs of our target population and the expertise of clinical experts by use of a Delphi panel and usability test. The DA is currently tested in the SHADE-POP trial (NL 55737.028.15).

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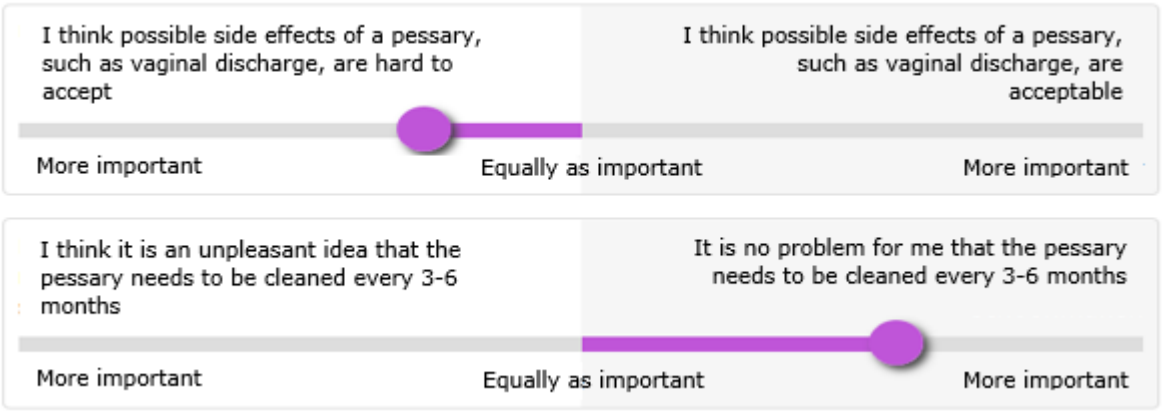

Figure 1 Example of a VCE

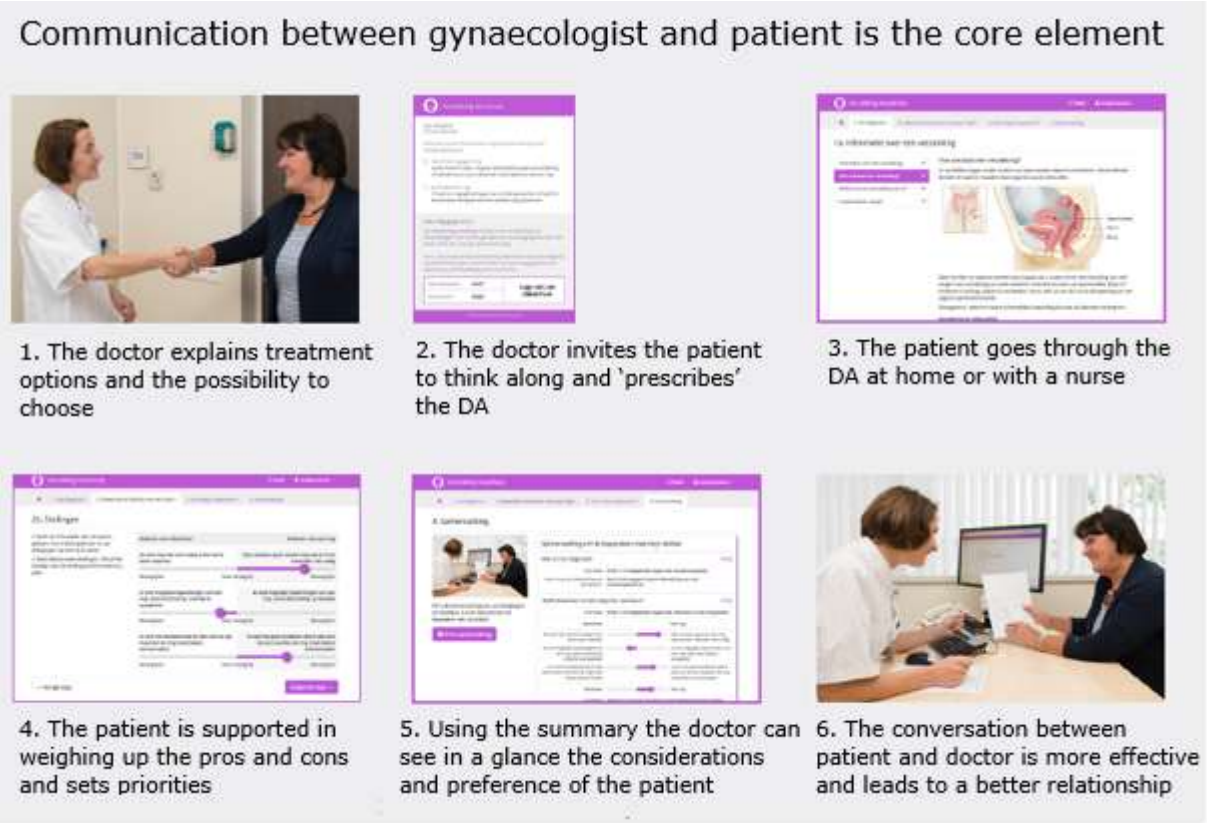

Figure 2 Provision of the DA in the current process of care

6 - PELVIC ORGAN PROLAPSE AND UTERINE PRESERVATION: A CASE CONTROL STUDY (POP-UP STUDY)

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INTRODUCTION AND AIM OF THE STUDY

Abdominal and laparoscopic sacro-colpopexy (LSC) is the preferred surgical option for the management of a symptomatic apical pelvic organ prolapse (POP). Women who have their uterus, and for whom an LSC is indicated, can have a laparoscopic sacro-hysteropexy (LSH), a laparoscopic supra-cervical hysterectomy and laparoscopic sacro-cervicopexy (LSCH+LSC) or a total laparoscopic hysterectomy and laparoscopic sacro-colpopexy (TLH+LSC). The main aim of this study was to compare clinical and patient reported outcomes of uterine sparing versus concomitant hysterectomy LSC procedures.

MATERIALS AND METHODS

A retrospective analysis of clinical, imaging and patient reported outcomes at baseline, 3 and 12 months after LSH (cases) versus either LSCH+LSC or TLH+LSC between January 2015 and January 2019 in a tertiary referral urogynecology center. The departmental medical database was used to gather data on patients' demographics, medical history, history of abdominal and/or gynecological surgery, previous reconstructive POP surgery, obstetric history, urinary or bowel symptoms and POP-Q staging points. Perioperative complications were categorized according to the Dindo-Clavien classification. The impact of the woman's symptoms on her quality of life during the pre- and postoperative periods was assessed using the Pelvic Floor Distress Inventory (PFDI). The overall satisfaction with the surgical procedure was evaluated by means of a 7-point Patient Global Impression of Improvement (PGI-I) scale. 3D/4D transperineal ultrasound scans were performed to assess the bladder neck and mesh placements and positions.

For the purpose of this study, anatomical apical compartment failure was defined as a postoperative POP-Q point C ≥ -TVL/2 cm. Points Ba and Bp ≥ -1 cm were considered failure in the anterior and posterior compartment respectively. Subjective success of the procedure was defined as a PGI-I < 3. Statistical analysis was performed using IBM SPSS Statistics software version 22 (Armonk, NY: IBM Corp.). A $p<0.05$ was considered statistically significant.

RESULTS

In total, 294 women were included in this analysis (LSH n = 43, LSCH+LSC n = 208 and TLH+LSC n = 43). There were no differences in the rates of perioperative injuries and complications. Operating time and blood loss were higher in the concomitant hysterectomy compared to the uterine sparing group but this was only significant when comparing LSH to TLH+LSC (p = 0.048). There were no statistically significant differences in any of the clinical or patient reported outcomes except for a significantly lower anterior compartment failure rate (p= 0.017) and higher optimal mesh placement rate at 12 months in women who had concomitant hysterectomy procedures (p = 0.006) (Table 1).

Table 1: Post-operative follow-up at at 12 months (N = 271 (92.2%)).

	Total	LSH	LSCH+LSC & LH+LSC	p
Early postoperative complications Clavien-Dindo grade II [N (%)]	3/294 (1.0%)	1/43 (2.3%)	2/251 (0.8%)	0.566[b]
Early postoperative complications Clavien-Dindo grade III [N (%)]	4/294 (1.4%)	0/43 (0.0%)	4/251 (1.6%)	
Postoperative complications related to mesh C1-C7 [N/N] (%)	4/271 (1.5%)	1/38 (2.6%)	3/233 (1.3%)	0.456[b]
Anatomical variables				
Failure in point C: C ≥ -TVL/2 [N/N] (%)	0/271 (0.0%)	0/38 (0.0%)	0/233 (0.0%)	-
Failure in point Ba: Ba ≥ -1 [N/N] (%)	26/271 (9.6%)	8/38 (21.1%)	18/233 (7.7%)	0.017[b]

Failure in point Bp: Bp ≥ -1 [N/N] (%)	15/271 (5.5%)	0/38 (0.0%)	15/233 (6.4%)	0.140[b]
Quality of life				
PGI-I 1, 2 [N/N] (%)	255/271 (94.1%)	33/38 (86.8%)	222/233 (95.3%)	0.055[b]
PGI-I > 4 [N/N] (%)	1/271 (0.4%)	0/38 (0.0%)	1/233 (0.4%)	
Δ UDI pre-op – post-op [median (range)]	25.0 (-112-160)	17.6 (-99-160)	33.7 (-112-150)	0.585[a]
Δ POPDI pre-op – post-op [median (range)]	39.3 (-74-253)	30.4 (-43-135)	48.2 (-189-253)	0.502[a]
Δ CRADI pre-op – post-op [median (range)]	3.6 (-92-170)	10.7 (-38-112)	7.1 (-118-170)	0.187[a]
Δ PFDI pre-op – post-op [median (range)]	70.4 (-182-460)	66.9 (-123-281)	82.5 (-338-460)	0.960[a]
Ultrasonography				
Distance of the lowest anterior mesh extremity from the bladder neck <2.0 cm [N/N]%)	240/265 (90.6%)	36/39 (92.3%)	204/226 (90.3%)	1.000[b]
Regular shape of the mesh upon visualization of the whole mesh [N/N] (%)	238/265 (89.8%)	32/39 (82.1%)	206/226 (91.2%)	0.090[b]
No folding of the mesh [N/N] (%)	245/266 (92.1%)	32/39 (82.1%)	213/227 (93.8%)	0.021[b]
No mesh descent on Valsalva 196/226 (86.7%) [N/N] (%)	252/254 (99.2%)	36/37 (97.3%)	216/217 (99.5%)	0.271[b]
Overall evaluation: all criteria for a properly placed mesh fulfilled [N/N] (%)	214/254 (84.3%)	25/37 (67.6%)	189/217 (81.7%)	0.006[b]

[a]Mann-Whitney U test; [b]Fisher's Exact Test

INTERPRETATION OF RESULTS

70% of women referred with a symptomatic apical POP have their uterus in situ. Our study demonstrated that LSC procedures with a concomitant total hysterectomy were associated with significantly longer operating time and intra-operative blood loss. In contrast, uterine sparing LSCs were associated with a significantly higher suboptimal placement of mesh and anterior compartment failures at 12 months postoperative. Nevertheless, other anatomical and patient reported outcomes were comparable in both groups.

CONCLUSIONS

LSHs were associated with a a suboptimally placed mesh and anterior compartment failures The availability of longer-term outcomes for the different LSC variants and the assessment of proposed new modifications to overcome challenges to mesh placement in LSH are essential to give women realistic prospects of making an equitable informed choice.

7 - PROLONGED VAGINAL PESSARY USE DURING COVID PANDEMIC

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INTRODUCTION AND AIM OF THE STUDY

During the pick of the Covid pandemic, IUGA published recommendations extending the pessary change beyond 6-9 months (Vaginal support pessaries are routinely changed at 4-6 months intervals). Literature on complications arising from extended use of pessaries is limited with only[1] one randomised controlled trial on Gellhorn pessaries, incontinence dish pessaries and rings showing that the outcomes of pessary change at 6 months are equivalent to those at 3 months.[2] Another randomised controlled study on Ring pessaries published in February 2020, showed that keeping pessaries in situ for up to 2 years of continuous use was safe practice, with only a 27% complication rate.[3]

Aim of this study is to observe the outcomes of prolonged pessary use in our patient population during the Covid pandemic.

MATERIALS AND METHODS

Ethical approval was obtained by the hospital Research and Development department. A standardised set of questions was used to assess the clinical impact of prolonged pessary usage..

RESULTS

During June and July 2020, 112 patients had a pessary changed. Of these, 75.9% (85/112) had a Ring pessary and 24.1% (27/112) had a Gellhorn pessary.

Forty-two patients had the pessary for 6 months or less. 36.6% (41/112) had the pessary in situ for less than 6 months. 53.5% (60/112) had a pessary for 6-9 months. 9.8% (11/112) had a pessary in situ for over 9 months.

Overall, 23.2% (26/112) had a pessary complication. Complication rate per patient: 34.1% (14/41) up to 6 months, 16.9% (12/71) over 6 months. Of these, 13.3% (8/60) where 6-9 months and 36.3% (4/11) over 9 months. These (4/11) were long-term pessary users that had a Gellhorn for over 9 months and did not experience any adverse effects. Some patients reported more than one complication.

Complication	Less than 6 months	More than 6 months
PV Bleeding (including spotting)	8	5
Pain	0	1
Discomfort	0	4
Discharge	3	4
UTI	1	1
Excoriations	9	10
Tissue overgrowth	0	1

Table 1. Complications occurring with pessary use for over or under 6 months.

Change after prolonged period of placement was found to be more difficult in five 4.4% (5/112) patients. At pessary change, there was more bleeding than expected in 7.1% (8/112) patients. There was an overgrowth of tissue in one patient, who also had significant pain and bleeding during the change of pessary. Fifty-seven patients were on vaginal oestrogen therapy (Vagifem).

Four patients were very anxious about coming to hospital and would have preferred to have a further 3 months before changing the pessary. Two patients reported that they wish to discontinue pessary management and have surgery.

INTERPRETATION OF RESULTS

Most (76.7%) patients did not experience any complications and were pleased about not coming to hospital for a pessary change at a high-risk time during COVID lockdown. Overall, 25.9% (7/27) women with a Gellhorn and 22.3% (19/85) pessary had a complication.

There was an 84-year-old woman that had a Gellhorn in-situ for 17 months without any complications. The patient with the worse complication was an 89-year-old that had a Gellhorn pessary for 6 months. She had severe skin overgrowth, pain and bleeding at the pessary change. Further work is needed to ascertain possible risks that predispose some patients to complications with pessary use.

CONCLUSIONS

Prolonged continuous pessary use appears to be safe in clinical practice. Extending the time between pessary changes is a safe policy to adapt in the event of a further pandemic wave or possibly in routine clinical practice in the future.

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8 - CAN PELVIC ORGAN PROLAPSE ASSOCIATED VOIDING DYSFUNCTION BE CURED BY A NERVE-SPARING SACROCOLPOPEXY?

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INTRODUCTION AND AIM OF THE STUDY

Women with pelvic organ prolapse (POP) are affected by different bothersome symptoms. While most clinicians pay special attention to concomitant urine incontinence with concurrent POP, voiding difficulties are often neglected or underestimated. POP surgery intends to restore pelvic function. We evaluated whether nerve-sparing sacrocolpopexy (NS-SCP) would resolve preoperative voiding dysfunction.

MATERIALS AND METHODS

Data from 103 women undergoing NS-SCP for POP stage ≥II utilizing the POP-Q quantification system, with concurrent subjective and/or objective voiding difficulties were analyzed. All women underwent an urogynaecological examination including a standardized uroflowmetry and completed the validated German Female Pelvic Floor Questionnaire (GFPFQ) pre- and postoperatively. Objective parameters such as maximal flow (Qmax), voiding time (tvoid) and the postvoid residual volume (PVR) as well as subjective data regarding bladder voiding were compared pre- and postinterventionally.

RESULTS

Significant objective improvement in POP correction was seen, as point Aa, Ba, C, Ap, Bp in the POP-Q system, improved significantly preoperatively to postoperatively ($p < 0,001$ for all points). 35 of 103 women showed a PVR >100 ml preoperatively. Only two of them had a persistent relevant PVR after surgery. The PVR in all women decreased significantly from pre-to postoperatively ($p < 0.001$). T-void increased from 45,7 ± 35,8 sec (mean ± SD) preintervention to 32,8 ± 24,6 sec postintervention ($p < 0,001$) with no difference in voided volume (preintervention 260,0 ± 161,5 ml, postintervention 282,4 ± 147,1 ml, $p=0,352$). Qmax increased from 17,9 ± 9,4 ml/s to 20,8 ± 11,2 ml/s, showing no significant difference ($p=0.132$). Subjective parameters improved significantly preintervention to postintervention regarding weak or prolonged stream ($p < 0.001$), incomplete bladder emptying ($p < 0.001$) or straining to void ($p < 0.001$).

INTERPRETATION OF RESULTS

Our data demonstrate that a NS-SCP corrects effectually anatomic abnormalities and ameliorates concomitant dysfunctions of the pelvic floor. These results show a significant improvement in both objective and subjective parameters regarding voiding difficulties after intervention.

CONCLUSIONS

A NS-SCP to correct POP can successfully resolve voiding dysfunctions.

9 - PERI-OPERATIVE RISK FACTORS FOR POST-OPERATIVE VOIDING DYSFUNCTION AFTER PELVIC FLOOR SURGERY.

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Background

Post-operative voiding dysfunction (POVD) is common following pelvic floor surgery. Urinary retention rates following incontinence and prolapse surgery range from 2.5-24% (Dörflinger et al, 2001). The aim of this study was to determine which patients are at highest risk for POVD. With this information developed, internally validate and externally validated a risk calculator for developing POVD following pelvic floor surgery using patient characteristics, urodynamic measures and operative factors.

Methods

This was a retrospective cohort study of 705 patients undergoing pelvic floor surgery from January 2015 to February 2020. Twenty one demographic, surgical and urodynamic variables were compared between POVD groups (Table 1) with the chi-squared test for discrete variables and the Wilcoxon Mann-Whitney test for continuous variables. Surgeries including sacrospinous ligament suspension, sacrocolpopexy, anterior colporraphy, posterior colporraphy, or concomitant anterior and posterior colporraphy +/- midurethral sling (MUS) procedures were performed as day cases. Vaginal hysterectomy and vaginectomy +/- MUS +/- anterior and/or posterior colporraphy were admitted overnight. A voiding trial was completed on the day of discharge from hospital (61.9% were day case surgery). Several models were used to predict POVD, all starting with the 21 variables above: full, penalized, and lasso logistic regression, random forest, classification tree and assessed by internal validation and construction of a calibration curve. The final model was externally validated using a separate data set (n=100) from another surgical centre.

Results

The lasso regression had the highest internally validated concordance index (0.74) and an accurate calibration curve. The variables predictive of POVD in this model were age, voiding efficiency, prolapse stage, EBL, operative time, history of surgery for incontinence, and the surgical characteristics vaginal hysterectomy, anterior repair, posterior repair, vault suspension, vaginectomy, and TVT. Using this data, a POVD risk calculator was developed which can be used preoperatively to counsel women regarding their risk of POVD (https://tomlinson-bru.shinyapps.io/povd/). We also include an intraoperative, modified risk calculator which includes EBL and operative time. This can be used to predict POVD in the case where an extra bleeding or a longer than anticipated surgery arises.

Conclusion:

If early POVD can be accurately predicted, this will allow physicians to counsel patients preoperatively on their risks of POVD. If a woman is at higher risk of POVD and is expected to require prolonged bladder draining, SPT insertion should be considered for bladder drainage as we know it is associated with better patient satisfaction postoperatively (McDermott et al, 2019).

Table 1: Baseline variables by POVD status

	No	Yes	p	test
n	389	320		
Year (median [IQR])	2017.00 [2016.00, 2018.00]	2018.00 [2016.00, 2018.00]	<0.001	nonnorm
BMI (mean (SD))	27.39 (5.40)	27.55 (5.12)	0.691	
Age (mean (SD))	59.43 (11.74)	64.08 (10.95)	<0.001	
HxUrogynSx (%)			0.934	
none	322 (83.0)	260 (81.2)		
Incontinence	11 (2.8)	9 (2.8)		
Prolapse	43 (11.1)	40 (12.5)		
Incontinence+Prolapse	12 (3.1)	11 (3.4)		
VoidingEfficiency (mean (SD))	95.15 (14.62)	87.44 (26.13)	<0.001	
Parity (mean (SD))	2.40 (1.12)	2.53 (1.21)	0.142	
Menopausal = Yes (%)	294 (75.6)	273 (85.8)	0.001	
ProlapseStage (%)			<0.001	
0	87 (22.4)	21 (6.6)		
1	39 (10.0)	10 (3.1)		
2	83 (21.3)	63 (19.7)		
3	159 (40.9)	186 (58.3)		
4	21 (5.4)	39 (12.2)		
Max.flow (mean (SD))	27.64 (13.40)	24.09 (12.50)	<0.001	
Av.flow (mean (SD))	14.28 (8.10)	12.17 (7.18)	<0.001	
Anaesthesia (%)			0.250	
General	341 (87.7)	291 (91.2)		
Spinal	45 (11.6)	25 (7.8)		
Sedation	3 (0.8)	3 (0.9)		
EBL (mean (SD))	141.92 (124.70)	203.79 (169.33)	<0.001	
IV.fluid (mean (SD))	1063.22 (537.75)	1212.01 (530.31)	<0.001	
Op.time..mins. (mean (SD))	132.09 (66.46)	169.45 (66.58)	<0.001	
DaySurgery = Overnight (%)	156 (40.1)	198 (61.9)	<0.001	
Voiding.protocol (%)			<0.001	
Didn't pass	9 (2.7)	280 (91.2)		
1:1 ratio	56 (16.9)	6 (2.0)		
2:1 ratio	266 (80.4)	21 (6.8)		
N..of.trials.in.hosp (mean (SD))	1.87 (0.82)	1.98 (0.93)	0.086	
VH = VH+ (%)	137 (35.2)	160 (50.2)	<0.001	
AR = AR+ (%)	253 (65.0)	257 (80.6)	<0.001	
PR = PR+ (%)	281 (72.2)	268 (84.0)	<0.001	
MC = MC+ (%)	137 (35.2)	157 (49.2)	<0.001	
SS = SS+ (%)	23 (5.9)	32 (10.0)	0.058	
VA = VA+ (%)	2 (0.5)	24 (7.5)	<0.001	
SC = SC+ (%)	5 (1.3)	5 (1.6)	1.000	
TVT = TVT+ (%)	235 (60.4)	192 (60.2)	1.000	
TVTO = TVTO+ (%)	7 (1.8)	11 (3.4)	0.251	

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10 - ANTERIOR BILATERAL SACROSPINOUS LIGAMENT FIXATION WITH ANTERIOR NATIVE TISSUE REPAIR. PRELIMINARY STUDY

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INTRODUCTION AND AIM OF THE STUDY

Both laparoscopic and vaginal surgery are commonly used to treat concomitant anterior and apical prolapse. Vaginal meshes improved anatomical results, but increase morbidity. The last FDA notification in 2019 ordered all manufacturers of surgical mesh intended for transvaginal repair of anterior compartment prolapse to stop selling and distributing their products. Since that date, surgeons had to provide patients an alternative technique, efficient and safest to treat anterior and apical prolapse vaginally.

Anterior bilateral sacrospinous ligament fixation (ABSLF) using native tissue, has been described since 2001[1], but few studies have been carried out [2,3]. Due to the ban on surgical mesh, this technique is reappearing under the spotlight. The aim of the study was to evaluate feasibility and peri-operative morbidity of that innovative technique.

MATERIALS AND METHODS

We performed a monocentric retrospective study. We included all women who undergone an anterior bilateral sacrospinous ligament fixation associated with anterior native tissue repair between May 2019 and July 2020 in a tertiary Hospital.

The procedure was performed by making an anterior vaginal wall infiltration, a midline anterior colpotomy from 3cm of the urethral meatus to 2cm of the cervix. Then, making dissection of the paravesical fossa bilaterally. Both paravesical spaces were progressivelly opened and the sacrospinous ligaments were dissected by blunt dissection. We placed two polypropylene sutures or tapes thanks to specific device (Capio Slim ™ Boston Scientific, Montigny-le-Bretonneux, France) approximately 2 cm medial to the ischial spine anchored with stitches on the cervix or utero-sacral ligaments.

Concomitant surgeries were performed at the surgeon's discretion and medical indication.

The primary endpoint was the feasibility of surgery defined as the possibility to perform anterior bilateral sacrospinous ligament fixation.

The secondary endpoint was peri-operative morbidity according to the Clavien-Dindo classification.

The tertiary endpoint was anatomical and functional results. For this, patients were evaluated by an independent clinician and they complete self-questionnaires PFDI-20, PFIQ-7, PISQ-IR and PGI-I.

RESULTS

50 women were operated consecutively. Mean age was 69.7 +/- 7, and the average body mass index was 26+/-8 kg/m^2. Mean surgery time was 74 +/- 17 min for patients who exclusively had ABSLF while it was 116+/-41min all combined, including concomitant surgeries. The average length of hospital stay was 3.7 +/- 1.9 days. 38 (76%) patients underwent a hysteropexy while 12 (24%) patients underwent a utero-sacral ligament fixation (9 (18%) concomitant hysterectomies and 3 (6%) previous hysterectomies). Concomitant surgery was performed in 37 patients (76%): 9 (18%) hysterectomies, 32 (65%) rectocele repairs and 2 (4%) mid-urethral slings.

The procedure was feasible in all cases.

No cases of rectal or bladder injury occurred. No intraoperative significant bleeding was noticed.

The rate of peri-operative morbidities was 14 (28%): 1 (2%) ureteral kinking solved by an ureteral catheter, 6 (12%) urinary tract infection and 10 (20%) post-operative urinary retention solved by self catheterization during mean of 15 +/- 12 days. No patient developed hematoma nor acute neurological pain. 1 patient (2 %) underwent a mid-urethral sling for de novo urinary incontinence.
Anatomical, functional and sexual results will be available later.

INTERPRETATION OF RESULTS

Our study confirms feasibility and safety of this procedure, in agreement with existing literature {2,3}.

The most frequent complications are urinary tract infection or difficulty resuming voiding.

CONCLUSIONS

Anterior bilateral sacrospinous ligament fixation associated with anterior native tissue repair is feasible and relatively safe for treating anterior and apical pelvic organ prolapse. Anatomical and functional results have to be evaluated.

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11 - THE PREVALENCE OF FRAILTY AND POST-TREATMENT OUTCOMES IN OLDER WOMEN WITH PELVIC FLOOR DISORDERS

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INTRODUCTION AND AIM OF THE STUDY

Women seeking treatment for pelvic floor disorders (PFD) may have a high prevalence of frailty, due to the age-related onset of symptoms of PFD in women. Frailty is an important clinical syndrome that indicates vulnerability leading to functional impairment, and it may lead to adverse health outcomes after conservative and surgical treatment. [1, 2] Previous studies showed that clinical outcomes of general surgery were worse in frail elderly patients (>65 years) compared to non-frail patients. Frailty could potentially impact the risks of conservative and surgical treatment. The present study is aimed at assessing the prevalence of frailty in patients with PFD using a validated screening tool.

MATERIALS AND METHODS

This study is a prospective observational study conducted in a single secondary clinical centre. A total of 263 women, over 65 years, with symptoms of PFD, were included. The primary outcome was to determine the prevalence of frailty in older women with symptoms of pelvic floor disorders.

Frailty was classified using the Groningen Frailty Indicator (GFI). In the questionnaire, 15 questions were answered, and the outcome of frailty was calculated by point. Every question is scored with 0 or 1 points. The outcome of frailty is calculated by adding up the points. Frailty was defined at the cut off value of 4 points or higher. Frailty was considered as a binary variable (>4 points). Both the patient and the doctor were blinded for the screening of frailty.

The study was approved by the ethical research committee (trial number 2017.88). A power analysis concluded that 262 patients were needed to assess the prevalence of frailty. Data were entered into an electronic database (Castor EDC) using standardized data forms. Statistical analyses were performed as appropriate using SPSS version 24. The primary outcome, the prevalence of frailty, was analyzed to a 95% confidence interval.

RESULTS

A total of 263 women were included in the analysis. The mean age of the study participants was 74 years (range 65 to 91 years). In total, 143 women (54.4%, 95% CI 48.1-60.5) were classified as frail according to the GFI. Frail patients did have more comorbidities in their medical history, such as cardiovascular disease, hypertension and diabetes mellitus and therefore used more medication for these medical conditions, such as antihypertensive medication and diabetic medication. Frail patients tend to have more symptoms of anal incontinence (p=0.034) and straining to defecate (p=0.020). The remaining symptoms of PFD were equally divided between the frail and non-frail patients.

INTERPRETATION OF RESULTS

Our study shows a high prevalence of frailty in women older than 65 years with symptoms of PFD. The relationship of pelvic floor disorders, such as urinary incontinence, and frailty as a geriatric syndrome is complicated. Previous research determines that urinary incontinence is a marker for frailty. On the contrary, frailty is considered as a marker for urinary incontinence. Frailty and urinary incontinence are therefore often present together, and the relationship is multidirectional. This study confirmed the high prevalence of frailty in patients with PFD.

Frail older women have more comorbidities in compared to non-frail patients, which can be explained using the GFI. One of the items in the GFI is the use of medication. If a patient uses more than four different medications, one point is added to the score of the GFI, concluding, that patients using more medication are more likely to be frail.

CONCLUSIONS

Our study finds a frailty prevalence of 54.4% in women older than 65 years with PFD visiting a secondary teaching hospital. Further research is required to investigate the potential increased risk for complications and

poor clinical outcomes after treatment for PFD in frail patients and to investigate the benefit of a comprehensive geriatric assessment in order to identify frailty to predict these potential risks.

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12 - PROSPECTIVE SERVICE EVALUATION AND PATIENT SATISFACTION OF VIRTUAL SPECIALIST-LED CLINIC IN UROGYNAECOLOGY

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INTRODUCTION

COVID-19 pandemic has led to drastic changes in the healthcare provision and overnight changes were introduced by the NHS with large-scale adoption of technology and implementation of telemedicine. It aimed to minimise the unnecessary exposure to the healthcare personnel and the patients, while providing safe and effective care to the patients during the pandemic. Telemedicine is not a new concept and traditionally, it has been used in primary care, triaging services and nurse-helplines for a long time where it has proven beneficial[1,2]. The role of telemedicine in secondary care is limited but results have been encouraging[3].

Urogynaecology has been one of the worst affected specialities during COVID-19 pandemic due to its elderly population with significant withdrawal of activities. Telephone consultations were introduced in our unit to protect this vulnerable set of patients from COVID-19, while continuing to provide care to them.

AIM OF THE STUDY

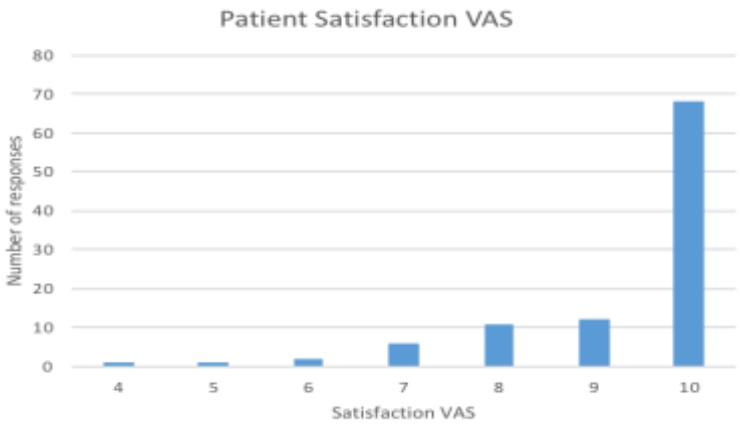
- To evaluate the feasibility, acceptability, patients' convenience and satisfaction of Urogynaecology telephone clinic in our unit during the COVID -19 pandemic.
- To assess service user opinion to inform restoration of services in the recovery stage.

MATERIALS AND METHODS

A telephone survey of patients scheduled for the above clinic. We took verbal consent from the patients. We asked closed and open-ended questions. Patients' satisfaction was evaluated using both a 5-point Likert scale and a 10-point visual analogue scale (VAS). We used descriptive statistics to analyse quantitative data and inductive thematic analysis for free-text comments.

RESULTS

101/109 (93%) participants completed the survey, median (Inter-Quartile Range, IQR) consultation duration:16 (8) minutes, 94% conducted by doctors. Median (IQR) patient age: 60 (21.5) years, with 51% having ≥1 co-morbidity, 33% were new, and 13% tertiary referral cases. For face-to-face appointments, patients travelled median (IQR) distance of 28 miles, with 99% requiring means of transport and 30% time off-work. 97% were happy/very happy with the telephone consultation, with 90% scoring 8-10 on satisfaction Visual Analogue Scale (VAS).



We also identified the benefits and challenges of the telephone clinics through our thematic analysis. Many patients considered telephone consultation convenient as it avoided travel, parking charges, long waits at hospital and the need to organise childcare. For others, it took away the anxiety of face-to-face consultation. The major limitations of telephone clinics reported by the patients were loss of non-verbal cues and interpersonal interaction and difficulties encountered by patients with hearing or memory problems, language barrier or where an examination was required.

INTERPRETATION OF RESULTS

Urogynaecology telephone clinics were feasible, acceptable and convenient with high level of patients' satisfaction during the current COVID-19 pandemic. They were found to be a safer alternative for older patients with 51% ≥ 1 co-morbidity, both of which are high-risk for COVID infection. Telephone consultations were cost effective as they avoided time off work and travel. They were found to be suitable for patients for follow up where an initial assessment and diagnosis has been made, whereas telephone consultations were considered unsuitable for new or tertiary referrals, patients requiring physical examination or for complex patients. Limitation of our study is small sample size and the bias due to the current COVID restrictions.

CONCLUSIONS

Telemedicine has a potential for a larger role in Urogynaecology as it deals mainly with chronic conditions requiring long-term follow-ups. We recommend a combination of face-to-face and virtual appointments as the way forward in the recovery stage. Robust studies are required to evaluate the feasibility of integrating telemedicine into routine Urogynaecology practice in the future.

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13 - FINITE ELEMENT MODELING OF MAXIMUM STRESS IN PELVIC FLOOR STRUCTURES AT HEAD EXPULSION (FINESSE) STUDY

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INTRODUCTION AND AIM OF THE STUDY

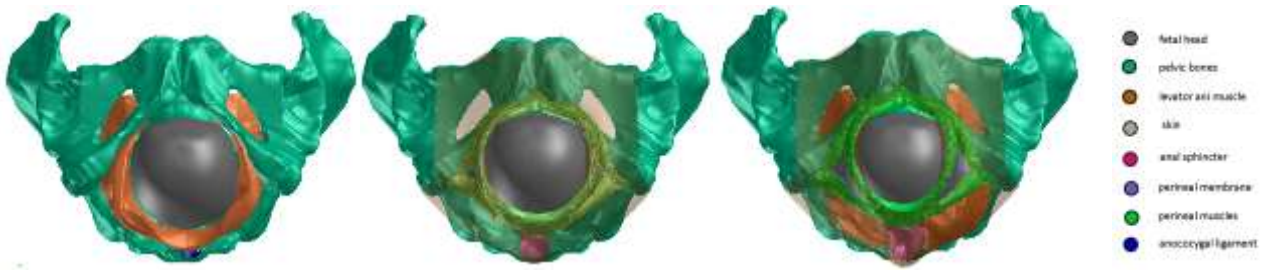
Vaginal birth causes a significant degree of deformation to the levator ani muscle (LAM) and perineal structures (PS) including the anal sphincter complex. A focus on understanding the timing(s) and site(s) of maximal deformation and displacement is an essential prerequisite to find solutions to mitigate the risk of adverse outcomes. However, the precise direct measurement of deeper layers is a serious limitation to real-life measurements. Therefore, recently several research groups have focused on using finite elements models based on available anatomical and biomechanical data.
Several studies have assessed LAM and PS deformations on models that depicted these elements in isolation where models with LAM were not equipped with perineum, and vice versa. Therefore, the main aim of this study was to develop a complex female pelvic floor computational model using the finite element method to evaluate points and timing of maximum stress at the LAM and PS in relation to process of birth.

MATERIALS AND METHODS

A three-dimensional computational model of female pelvic floor and the fetal head and its trajectory through the pelvic floor structures was created and used to simulate vaginal birth based on data from real-life MRI scans previously described. To design perineal components, the geometry as well as material parameters were based on available data from previous experimental, clinical and biomechanical studies as well as cadaveric measurements performed by our group.

We developed three models: model A (LAM without PS); model B (PS without LAM); and model C (a combined model with both structures) (Fig 1).

Fig 1. Variants of the model



model A (LAM without PS) model B (PS without LAM) model C (combined model) color legend

For the vaginal delivery simulations, the same fetal head and birth trajectory were used for all three models. No obstetric interventions or maneuvers were simulated, i.e. all simulations were “hands-off”. We measured the site, absolute values and timing of points of maximum stress in the LAM and PS in relation to the course of vaginal birth. The timing of the maximum LAM values was defined by stations, i.e. the head descent measured between the most distal point of the fetal head and the level of the ischial spines. The timing of the maximum PS stress values was defined by the fetal head diameter passing the plane between the lower margin of the pubic bone and posterior fourchette. Finally, the distal displacement of LAM and PS structures were compared to their pre-delivery position.

RESULTS

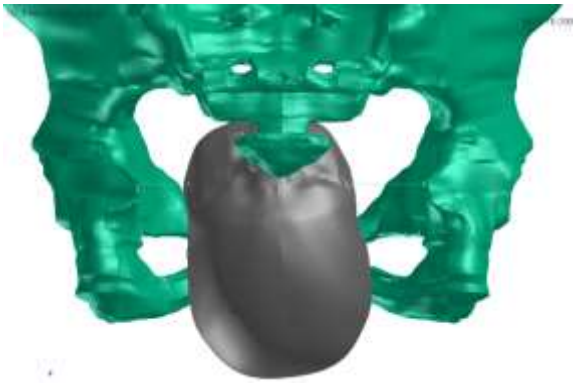
The maximum stress in LAM was achieved when the vertex was nine cm below the ischial spines and measured 128.5 MPa in model A and 305.8 MPa in model C. The maximum PS stress occurred at the time of distension by the suboocipito-frontal diameter and reached 299.0 MPa and 315.3 MPa in models B and C respectively. While the maximum stress in the posterior fourchette was caused by the suboccipito-bregmatic diameter measured 174.5 MPa for model B and 157.4 MPa for model C.

INTERPRETATION OF RESULTS

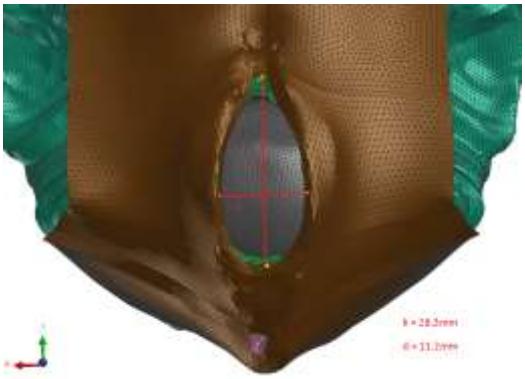
We were able to analyze the behavior of both structures separately and compare this data with those obtained from the complex model. We found that the LAM maximum stress markedly differed between the model with LAM only (model A) and the complex model (model C). Therefore, it is imperative that any future computational modeling to assess the impact of childbirth on LAM must be done on the model equipped with both LAM and PS elements.

Moreover, we were able to assess the station of the fetal head associated with LAM maximal stress. Interestingly, this seemed to happen when the baby's zygomatic processes of the temporal bones were at the level of the maternal ischial spines (Fig 2) and hence much lower than we previously expected. This implies that interventions to reduce such pressure at the time of head crowning might be of paramount importance, not only for the PS but also for the LAM.

Fig 2. Fetal head position at the time of maximum stress in LAM in model C



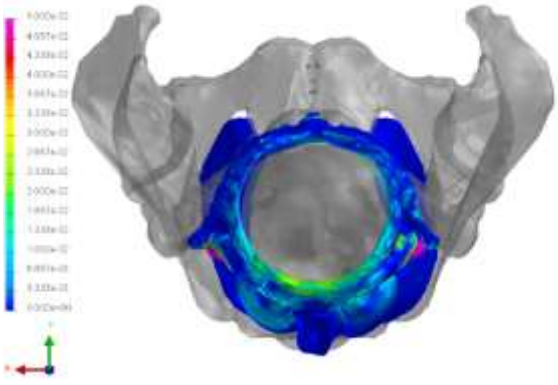
Relationship between fetal head and ischial spines



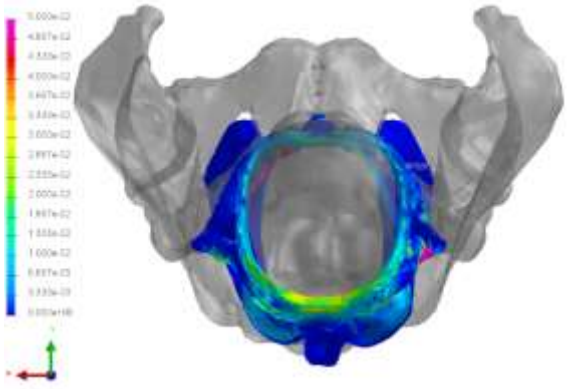
Obstetrician's view during maximum stress in LAM

Furthermore, based on the previously described real-life fetal head trajectory, we identified that the maximum strain at the PS is caused by the suboccipito-frontal rather than the suboccipito-bragmatic diameter. This happens because of the natural head extension as the subocciput pivots against the maternal sumphysis pubis (Fig 3). This suggests that in the clinical setting manual perineal support at the time of head expulsion should continue, at least, till the supraorbital margin of the frontal bone passes the posterior fourchette.

Fig 3. Passages of fetal head circumferences through the perineal structures and color scale of stress



Suboccipito-bregmatic circumference through perineum



Suboccipito-frontal circumference through perineum

CONCLUSIONS

Computational models used to assess the impact of childbirth on the maternal pelvic floor musculature should depict both the LAM and PS simultaneously. The maximum strain at the LAM and PS seemed to occur when the head was lower than previously anticipated. The maximum strain at the PS is caused by the suboccipito-frontal rather than the suboccipito-bragmatic diameter.

14 - UNDER-DIAGNOSIS OF INTERNAL ANAL SPHINCTER INJURY: A 4 YEAR REVIEW IN A TERTIARY CENTRE

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INTRODUCTION AND AIM OF THE STUDY

Anal sphincter trauma during childbirth represents the most important risk factor for development of fecal incontinence in women(1). Damage to the anal sphincter complex occurs in 1-3% of vaginal deliveries, and functional outcomes are directly linked to the severity of the tear(1). There is growing interest in multiple imaging modalities for the diagnosis of obstetric anal sphincter injury, especially those to be used in a 'rule out' capacity(2). Despite these advancements in imaging technology, the diagnosis of OASI is based clinical suspicion, and the accoucheur's clinical acumen. As with all obstetric skills, there is variance in the diagnosis of OASI. We sought to compare the grade of tear found clinically, with that found on endoanal ultrasonography in a dedicated perineal clinic.

MATERIALS AND METHODS

This was a cross-sectional study using anonymized data from an institutional hospital database. Women were included if they were referred following primary repair of a first recognized obstetric anal sphincter injury (3a – c, or 4th-degree tear) sustained during vaginal delivery over a 4-year study period. Women were coded in the database according to the referring healthcare professional's opinion of the grade of tear. The information recorded included age, parity, and mode of delivery. Patients with a known history of anorectal disease, previous anal sphincter injury, irritable bowel disease or inflammatory bowel disease were not included in the present study. As part of their initial clinic attendance, each patient completed a bowel continence questionnaire(3) and underwent endoanal ultrasound.

RESULTS

Between January 2016 and December 2019, 615 women were referred with an obstetric anal sphincter injury. The median age was 33 years (mean 33.1, range 18-45) and median parity was 1 (range 1-4). Of the 614 women, 178 (71.1%) were primiparous. When analysing mode of delivery, 58.5% (105/615) of women had undergone spontaneous vaginal delivery, 17.1% (105/615) were delivered by vacuum extraction only, 14.1% (87/615) were delivered using forceps alone, and 10.2% (63/615) were delivered using sequential instruments. Of these, 258 (42.0%) were referred with a 3a tear, 248 (40.3%) with a suspected 3b tear, 67 (10.9%) with a suspected 3c tear, and 42 (6.8%) with a 4th degree tear.

In women who referred with a clinical 3a or 3b tear, 6.5% (33/506) had an intact external anal sphincter on ultrasound. Sonographic evidence of damage to the internal anal sphincter was seen in 12.6% (64/506) of clinical 3a or 3b injuries. Of these, 28.1% (18/64) had a scar on the IAS, while 71.9% (46/64) had either a 0-1 or 1-2 quadrant defect. Over half (38/67) of women referred with a clinical 3c tear had an intact internal anal sphincter on endoanal ultrasound. One (1.5%) woman who had been diagnosed with a 3c sphincter injury had no sonographic evidence of damage to the external or internal anal sphincter. In women referred with damage to the rectal mucosa (4th-degree tear), 14.3% (6/42) had an intact internal anal sphincter. All women referred with a 4th degree tear had some degree of damage to the external sphincter when examined under ultrasound.

The median continence score was 0 (range 0-20). Almost two-thirds of women, 65.7% (404/615) were asymptomatic. Of those with symptoms, 153 women (24.9%) had a CS of ≤4, 35 women (5.7%) had moderate symptoms (CS 5-9), and 23 women (3.7%) had a CS > 9. Women who had a sonographic damage to the internal anal sphincter had worse symptom scores when compared to those with an intact sphincter ($p < .001$), see Figure 1.When the internal anal sphincter was damaged, those women referred with a 3c tear had higher symptom scores than those referred with a 3a/b tear ($p = 0.009$), whereas when the IAS was intact, there was no difference in symptom scores between those referred with a clinical 3a/3b tear and those referred with a 3c tear ($p = 0.114$).

Tone on rectal examination was noted to be reduced in 47.3% (61/129) of cases where the IAS was injured, compared to 11.3% (55/486) of women with an intact IAS. Women with reduced tone on rectal examination were almost twice as likely to have had an IAS injury compared to those with normal resting tone (RR 1.81, 95% CI 2.36 – 1.47, $p < .001$)

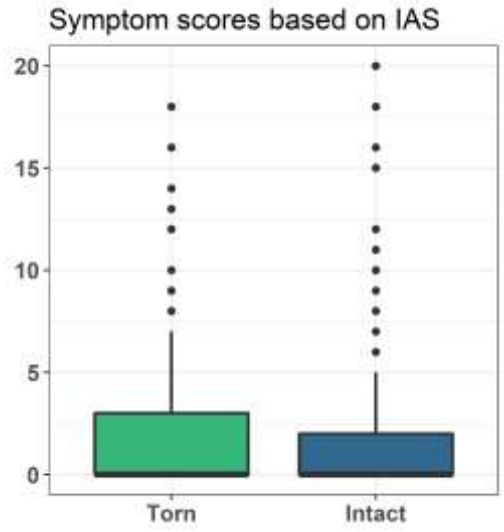

Figure 3: Continence scores by IAS damage

INTERPRETATION OF RESULTS

This study has shown that 1-in-8 clinical 3b tears involve undiagnosed damage to the internal anal sphincter. Women who have damage to their internal anal sphincter have worse continence scores compared to those without IAS damage. Clinical suspicion of a 3c tear remains a risk factor for continence symptoms, perhaps related to other pelvic floor damage occurring at the time of the injury.

Internal anal sphincter damage well-linked to worse pelvic floor outcomes(1) and 12% of women with OASI have undiagnosed damage to this muscle in this study. This is especially important when considering mode of delivery for the subsequent pregnancies, as those women who are asymptomatic despite substantial IAS damage may benefit from elective caesarean delivery.

A small number of OASI are over-diagnosed, and these can be ruled out with endoanal ultrasound. While such tears may have altered a woman's immediate follow-up after delivery, they are unlikely to have any long-term harm, as the woman can be reassured her sphincter complex is intact.

Given the size of our unit and the long-term nature of the data collection, this under-diagnosis likely represents a systematic issue, rather than poor diagnosis by a limited number of clinicians. Further research in other units to explore this finding would be beneficial. While our clinic has use of endoanal ultrasound, rectal examination—the 'trained finger'—can detect IAS damage. This finding is especially useful for clinicians, as a finding of reduced tone on PR examination should prompt investigation for IAS damage.

CONCLUSIONS

One in eight women diagnosed with a 3a or 3b OASI have actually suffered damage to their internal anal sphincter. Damage to this muscle is linked to poorer short- and long-term outcomes in women, and has a drastic impact on planning future deliveries. This study underpins the importance of an established perineal clinic with access to ultrasound. Regardless of ultrasound, if reduced tone is felt on rectal examination, a clinician should have a high index of suspicion for an occult IAS injury.

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15 - INDIVIDUAL PLANNING OF TVT INSERTION USING PELVIC FLOOR SONOGRAPHY - WHAT RESULTS WE CAN EXPECT?

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INTRODUCTION

According to Ulmsten's description, to treat efficiently stress urinary incontinence (SUI) the suburethral tension-free vaginal tape TVT should be placed in the mid-urethra (high pressure zone). Ulmsten believed that it should be achieved when the beginning of the suburethral incision of the mucosa started 10 mm from the external urethral opening. Later observations showed that using this technique caused different locations of TVT tape along the urethra. Kociszewski et al. suggested that the reason for that may be differences in urethral length [1]. The literature specifies female urethral length between 17mm and 50mm. Kociszewski et al. introduced 1/3 formula: individual determination of the incision site of the vaginal mucosa in each patient depended on the sonographic length of the urethra - it started on 1/3 of this length. After such operations the dispersion of the tape location became much smaller in the whole group of operated women in comparison with women after TVT implanted after incision which started 10 mm from the external urethral opening [1]. However, the accuracy of obtained location of the tape in each patient has not been studied so far.

OBJECTIVES

The aim of the study was to analyze the obtained location of the TVT tape in patients with SUI after individual planned operations (formula 1/3).

MATERIALS AND METHODS

This study is a retrospective analysis of data obtained at a tertiary Urogynaecology unit from 223 patients with complete data for the evaluation. According to the formula 1/3 they had TVT tape implanted to cure SUI by experienced surgeons in this operation in one urogynecological center.

Pelvic floor sonography with transvaginal probe (PFS-TV) followed a standardized technique developed by Kociszewski using GE Voluson 730 (GE Healthcare, Chalfont St. Giles, UK; vaginal scanner, 4.0–9.0 MHz, 1608 beam angle). Introital ultrasound was performed with a 2D, high frequency (6.5 MHz, emission angle of 160°) transvaginal probe in a patient sitting in a half-reclined position in a gynecology chair. The transducer was placed over the external orifice of the urethra, its axis aligned with the body's axis, with minimal pressure exerted on the examined area. The pubic symphysis (which was the sole fixed orientation point), the urethra, and the bladder neck were all depicted in one image, and the sonographic urethral length was measured in the sagittal axis (before and on the 2nd-3rd day after the operation). Following Kociszewski's recommendations, suburethral tape location was identified along the transverse and the longitudinal urethral axis (2nd-3rd day after the operation) [1,2].

A test-retest series of urethral length measurements during PFS-TV ranged between 0.81 and 0.9873, for suburethral tape location ranged from 0.6665 to 0.9911 [3, 4].

TVT insertion followed the technique by Ulmsten. The incision location was chosen with respect to the urethral length using 1/3 formula: the suburethral incision started at 1/3 ultrasonographically measured urethral length. For example, when urethral length was 30 mm the incision started 10 mm from the external urethral orifice. In women with urethral length 42 mm started 14 mm from the external urethral orifice.

The accuracy of the obtained location of the TVT - precise location of the tape (PLT and PLT%) was assessed according to the proposed own formulas 1 and 2:

- for absolute values by comparing the values of the LUTL parameter

$$precise\ location\ of\ the\ tape\ (mm) = obtained\ location\ of\ the\ tape\ LUTL\ (mm) - planned\ tape\ location\ LUTL\ (mm)$$

(formula 1)

- for relative values comparing the LUTL% values

$$precise\ location\ of\ the\ tape(\%) = obtained\ location\ of\ the\ tape\ LUTL\%\ (\%) - planned\ tape\ location\ LUTL\%\ (\%)$$

(formula 2)

In the results of the analyzes performed, the plus sign (+) indicates the shift of the tape towards the external urethra, while the minus sign (-) indicates the shift towards the bladder opening of the urethra.

Statistical analyzes were performed in the Statistica 13.3 program by StatSoft Polska, using the Analysis of Variance (ANOVA) and the HSD Tukey test.

RESULTS

In 223 patients, aged 59 years (19-88), the average urethral length was 30,5 mm (18,7-42,2). The mean distance of starting incision was 10mm (6-14). In 70% of patients (n=156) the incision started between 9 and 11mm, in 18,8% (n=42) – over 11 mm, in 11,2% (n=25) – below 9mm.

The mean PLT was 0,8mm (-7,4 - +9,4). In 76,7% of patients PLT was between -3 and +3 mm, in 14,8% PLT was between +3,1 and +6 mm, in 5,4% PLT was between -3,1 and -6 mm, in 1,8% PLT was between +6,1 and +9 mm, in 0,4% PLT was less than -6,1 mm, in 0,9% PLT was greater than +9,1 mm.

The mean PLT% was -0,3% (-24,2 - +22,5). In 90% of patients PLT was between (-10%) and (+10%), in 5% PLT was between (+10,1%) - (+20%), in 0,5% PLT was between (+20,1%) - (+22,5%), in 4% PLT was between (-10,1%) - (-20%), 0,5% PLT was between (-20,1%) - (-24,2%).

SUMMARY

By using the formula 1/3 according to Kociszewski, it is possible to obtain the planned location of the TVT tape in most patients.

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16 - IMPACT OF VAGINAL ASSISTED DELIVERY ON THE PELVIC FLOOR AND ANAL SPHINCTER. ULTRASOUND STUDY

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INTRODUCTION AND AIM OF THE STUDY

Levator ani muscle avulsion injury after vaginal delivery is a major risk factor for pelvic organ prolapse. Vaginal operative delivery seems further significantly increase the risk of such a levator ani trauma and OASI. Injuries after Forceps and Vacuum delivery are not equal. The data of incidence of the levator ani trauma and OASI after Forceps and Vacuum delivery varies and are influenced by episiotomy rates and other obstetrical local habits. We have provided analysis of patients in our perineal clinic routinely following up patients after OASI and after operative delivery to analyse incidence of levator ani trauma, OASI after Forceps and Vacuum delivery. As an addition we were able to search for incidence occult OASI in this group. As a reference we were able to use data after normal vaginal delivery of nulliparous women.

MATERIALS AND METHODS

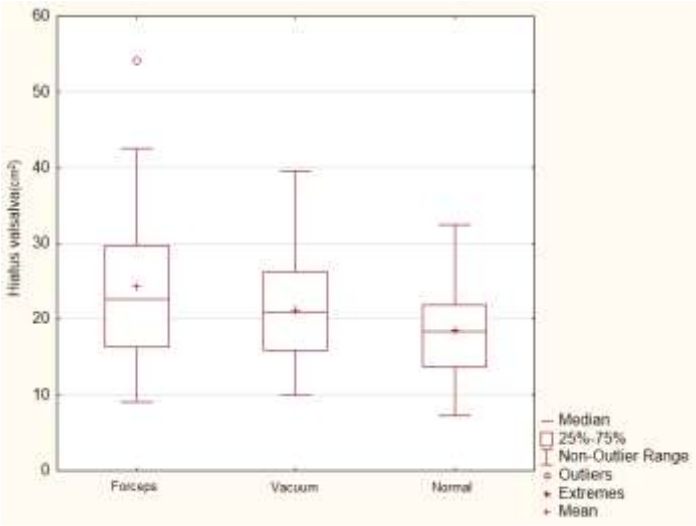
Retrospective cohort study of 201 women after Vacuum or Forceps delivery delivered in our department between 2009-2019. Patient cohort description in Tab.1. Mediolateral episiotomy is provided in all Forceps and Vacuum assisted deliveries. The OASI rate in the department is 1,5%. Women visited perineal clinic earliest after 3-month post-partum. 4D pelvic floor ultrasound examination was performed including levator ani and anal sphincter complex assessment and volumes were stored for later evaluation. We have calculated levator ani avulsion rate, OASI incidence, occult sphincter trauma and compare both operative delivery group with data after normal first vaginal delivery in the same department.

RESULTS

Out of 201 women 141 delivered with Vacuum and 60 with use of Forceps. In Forceps group we diagnosed levator avulsion injury in 36 women (60%) vs. 21 women in Vacuum group (21,7%) compared to 9 women (20.9%) after normal first vaginal delivery. After multivariant analysis we calculated in Forceps group OR=4,32 of avulsion and for Vacuum OR=0,98. OASI suffered in Forceps group 22 women (37%) vs 37 women (21%) in Vacuum group. OASI after Forceps compared to Vacuum extraction group has OR=1,84 (p = 0,086). After multivariant analysis urogenital hiatus in Valsalva is distended by 2,15cm^2 (p=0.005) in Forceps group in comparison to Normal group and in Vacuum group urogenital hiatus is distended by 0,17cm^2. (NS) Results are depicted in tab. 2 and urogenital hiatus in figure 1. We did not detect any occult OASI.

Tab. 1	Count	Age mean	Age std. dev.	Parity mean	BMI mean	BMI std. dev.	Child weight (g) mean	Child weight (g) std. dev.
Forceps	60	33	3,8	1,1	23,2	4,3	3473	396,7
Vacuum	141	30	4,3	1,0	22,5	3,3	3383	357,6
Normal	43	30	4,7	1,0	22,9	3.8	3274	518,8

Tab 2.	Count	Avulsion totally	Avulsion billateral	Avulsion OR CI95%	Avulsion p	Urogenital hiatus resting (cm^2)	Urogenital hiatus Valsalva (cm^2)	OASI	Occult OASI
Forceps	60	36 (60%)	19 (53%)	4,32	p< 0,001	15,3	24,3	22	0
Vacuum	141	21 (21,7%)	9 (30%)	0,98	p=0,0178	14,2	21,3	37	0



INTERPRETATION OF RESULTS

This is one of the largest analysis of pelvic floor trauma and OASI after vaginal operative delivery. Levator ani avulsion rate after Vacuum assisted delivery is comparable with the rate after first normal vaginal delivery. This in contrast with Forceps delivery which quadruple the incidence of levator ani injury with more than half with bilateral defect. The same effect is seen in increased size of genital hiatus during the Valsalva group only after Forceps. Both types of delivery significantly increased the OASI rate with the highest incidence in Forceps delivery group. We were not able to detect any occult OASI, which implies that the specifically careful post-delivery examination depicts all OASI.

CONCLUSIONS

Our data has shown that Vacuum assisted delivery does not increased the risk for levator ani which is currently surgically not reparable injury with lifelong impact. Therefore, we should not use Forceps as a first option in situations where we have the choice

17 - PREDICTORS FOR SEXUAL DYSFUNCTION IN THE FIRST YEAR POSTPARTUM: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION AND AIM OF THE STUDY

Pregnancy and childbirth increase the risk for pelvic floor dysfunction, including sexual dysfunction yet also body image disturbance. So far, the mechanisms and the extent to which certain risk factors play a role, remain unclear. In this systematic review of literature and meta-analysis, we aimed to determine the risk factors for sexual dysfunction in the first year after delivery, and to elucidate the role of body image dissatisfaction in this process.

MATERIALS AND METHODS

We searched Pubmed/MEDLINE, Embase and the Cochrane Library. Two reviewers screened the results for title and abstract independently, thereafter in the full text version. We included original English, comparative studies that used validated questionnaires and the ICS/IUGA terminology for sexual dysfunction, dyspareunia and vaginal dryness(1). We assessed the quality and the risk of bias of the included studies with the Newcastle Ottawa Scale for non-randomized studies in meta-analyses. We extracted the reported data and we calculated the Odds Ratios (ORs) with 95% Confidence Intervals (95% CIs), when applicable. When there were at least four studies sufficiently homogeneous in terms of design, setting, population, obstetric event and outcome we computed summary ORs with Review Manager 5.3. Heterogeneity across studies was assessed using the I^2 statistic.

RESULTS

We included 41 studies, of which 16 eligible for quantitative synthesis. We performed meta-analysis of the studies that reported on cesarean delivery versus vaginal delivery (Fig.1). Operative delivery and perineal trauma, including episiotomy and anal sphincter injury were associated with dyspareunia (Fig.2-3). We retrieved one study which reported on vaginal dryness and two studies which reported on body image dissatisfaction.

Fig.1 Forest plot for cesarean section as risk factor for sexual dysfunction (1.1.1) and for dyspareunia (1.1.2)

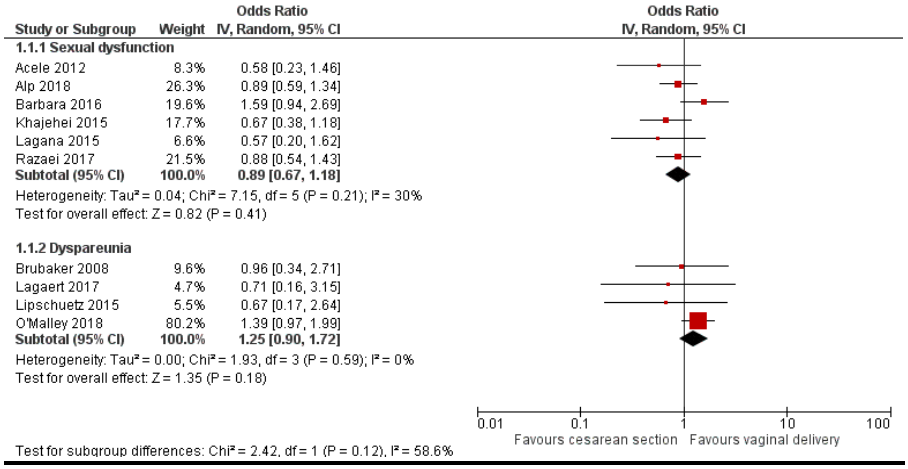


Fig.2 Forest plot for extraction including vacuum (1.2.1) and forceps (1.2.2) as risk factor for dyspareunia

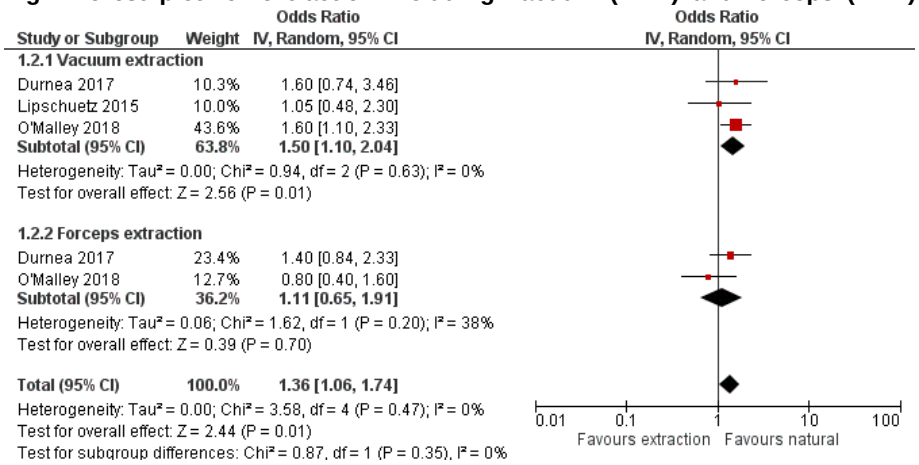
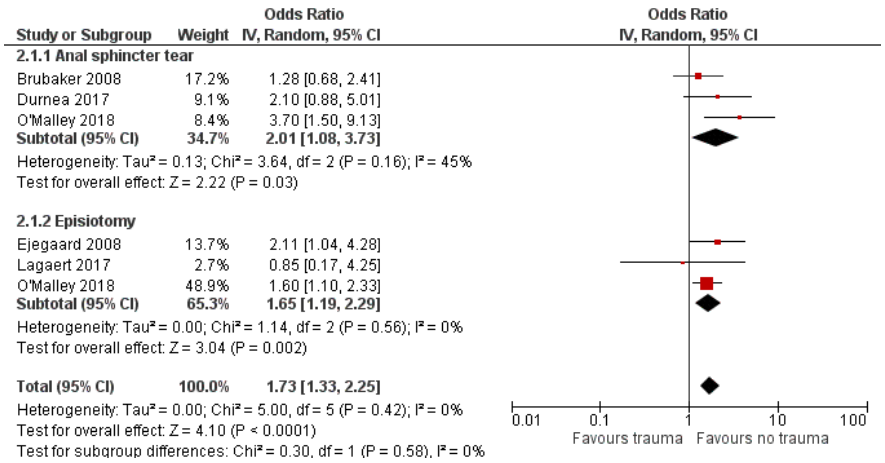


Fig.3 Forest plot for perineal trauma including anal sphincter tear (2.1.1) and episiotomy (2.1.2) as risk factor for dyspareunia



INTERPRETATION OF RESULTS

In our review we found that cesarean section does not protect against sexual dysfunction and dyspareunia in the first year after delivery. Operative delivery and perineal trauma increase the risk for dyspareunia. The effect of delivery on vaginal lubrification and the role of body image on sexual function after delivery have not been extensively investigated.

CONCLUSIONS

Cesarean section is not protective for sexual dysfunction and dyspareunia after delivery. Perineal trauma and operative vaginal delivery increase the risk for dyspareunia, however it would be of interest to investigate the role of each specific obstetric intervention separately. Further research is necessary to clarify the effect of childbirth on vaginal lubrification and to define the role of body image on sexual function after delivery.

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18 - THE PREVALENCE OF PELVIC FLOOR DYSFUNCTION IN THE PREGNANT WOMAN

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INTRODUCTION AND AIM OF THE STUDY

Pelvic floor dysfunction is a common symptom affecting women in later life (1), especially those who are post-menopausal. While pelvic floor dysfunction has been well-examined in the gynaecological population, little work has been done to investigate the burden on pregnant women.

Management of labour is changing, with concomitant efforts to reduce primary caesarean section and decrease the number of forceps-assisted deliveries. Internationally, professional bodies have advocated for a prolongation of the second-stage of labour in an effort to avoid the primary caesarean section. (2) This comes despite evidence that a longer second stage of labour is linked to increased rates of both obstetric anal sphincter injury, and levator ani muscle avulsion. (2)

Little is known on the degree of pelvic floor symptoms in the short- and medium-term after labour as women are notoriously slow to present to their healthcare-providers with pelvic floor symptoms. Thus, we aimed to examine the prevalence of pelvic floor dysfunction in the pregnant population.

MATERIALS AND METHODS

This was a prospective cohort study. Pregnant women were recruited in consecutive antenatal clinics over two months (May 2020 – July 2020). Women were eligible for inclusion in the study if they were currently pregnant with a singleton fetus above 24 weeks gestation. Women were excluded if they had a pre-existing pudendal neuropathy, a fetus with a suspected congenital malformation, previous pelvic floor surgery, known connective tissue disorder, or an intra-uterine demise (stillbirth)

The Australian Pelvic Floor Questionnaire (3) was given to all women to complete in the antenatal clinic. Scores in each domain—bladder, bowel, prolapse, and sexual function—are marked out of 10, with the four domains combined to give a total pelvic floor score out of 40.

Patient demographics were extracted from the hospital electronic healthcare record. Scores between multiple groups were compared using one-way ANOVA. A multiple regression model was created with total pelvic floor score as the dependent variable, and adjusted for maternal age, body mass index, gestational age, and parity. Statistical analyses were performed using R4.0.2 (R Foundation for Statistical Computing, Vienna, Austria). The hospital REC approved the study.

RESULTS

From May to July 2020, 443 women were recruited across consecutive antenatal clinics, of these, 440 (99.3%) completed the questionnaire. Missing data did not exceed 2.7% (12/440) for any question. Of the women recruited, 189 (43.0%) were nulliparous, 200 (45.5%) were multiparous with only previous vaginal deliveries, and 51 (11.6%) were multiparous having had only previous caesarean deliveries. The median (range) age of women answering the questionnaire was 34 (18 – 45), and the mean ± SD gestational age at recruitment was 30 ± 9 weeks. The mean (range) BMI of women recruited was 26.1 (16.9 – 50.8). Nulliparous women were significantly younger than multiparous women, regardless of previous scar ($F(2,437) = 15.87$, $p < .05$, $\omega = .26$). There were no significant differences in gestational age or body mass index between nulliparous women, multiparous women, and those with a previous uterine scar.

The overall median (range) pelvic floor score was 18.32 (0 – 3.91). Median (range) scores for the bladder, bowel, prolapse, and sexual function domains were 1.33 (0 – 7.33), 1.47 (0 – 5.29), 0 (0 – 6.67), and 0.48 (0 – 5.71), respectively. Scores for each domain grouped by parity can be seen in Figure 1. There were no significant differences in total pelvic floor scores between nulliparous women, multiparous women, and those with a previous uterine scar ($F(2,437) = 0.60$, $p = .548$, $\omega = .05$).

When bother scores were analysed separately, over 90% of women reported bother scores ‘Not at all’ or ‘Slightly’ in all domains. Less than 4% (16/440) reported the bother of their symptoms as ‘Greatly’ in any of the four domains.

In our multiple regression model gestational age was positively correlated with total pelvic floor scores (OR 1.06, 95% CI 1.03 – 1.10, p < .001), while maternal age was negatively correlated (OR 0.92, 95% CI 0.86 – 0.98, p = .009). No effect was seen between body mass index (p = .678), previous vaginal delivery (p = .881) or previous caesarean deliveries (p = .791) and total pelvic floor scores.

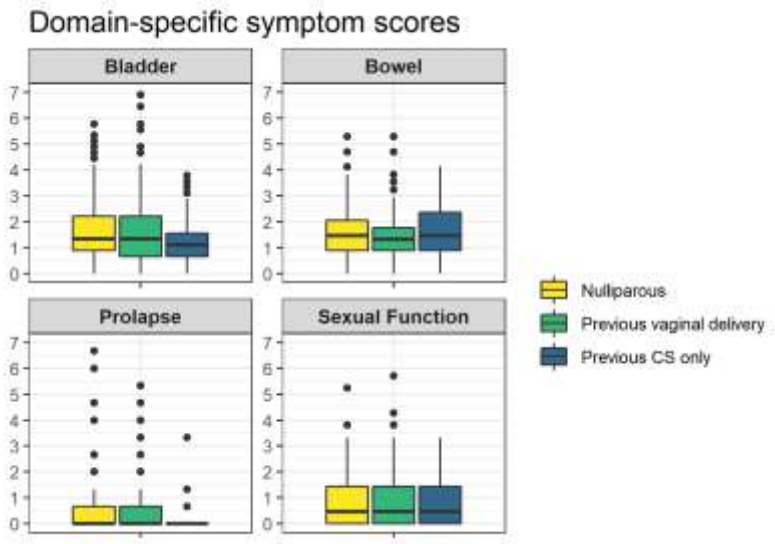

Figure 1: Domain-specific scores by parity

INTERPRETATION OF RESULTS

This study has shown that there is a low level of pelvic floor dysfunction in the pregnant woman, regardless of parity. Strikingly, there are little-to-no symptoms related to pelvic organ prolapse, even in those with previous vaginal deliveries. Nulliparous women were as affected by pelvic floor dysfunction during pregnancy as those with previous vaginal or caesarean deliveries, highlighting the effect of pregnancy itself on the pelvic floor. Notably, however, despite a wide range of pelvic floor scores, bother scores were low across all groups and domains, with less than 1-in-25 women reporting their symptoms as 'Greatly' affecting them.

Symptoms appear to increase with advancing gestational age, a finding which is perhaps unsurprising given the size of the term, gravid uterus. Maternal age appears to confer a benefit—even after adjusting for parity—though this is effect was slight. Socioeconomic variables associated with women becoming pregnant later in life may explain some of the differences seen here, though this is an area that requires further study.

Results presented here are similar to those reported in a previous Irish study, (1) though that focused purely on nulliparous women at the end of the first trimester. Similar results, however, were seen in a contemporary Chinese study, (3) reinforcing our finding of a low burden of pelvic floor dysfunction in the pregnant population.

CONCLUSIONS

Pregnant women have a low level of pelvic floor dysfunction, and this does not appear to be affected by parity, though advancing gestational age worsens symptoms. Older mothers appear to have less pelvic floor dysfunction, though this requires further study.

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19 - A REVIEW OF ALL SETTLED OBSTETRIC ANAL SPHINCTER INJURY (OASI) CLAIMS MADE IN 2017 - IDENTIFYING TRENDS IN LEGAL CASES

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INTRODUCTION AND AIM OF THE STUDY

A review of all settled Obstetric Anal Sphincter Injuries (OASI) claims made in 2017 – Identifying trends in legal cases

An in-depth examination of the causes of these life-changing injuries and the investigations and interventions that followed them. For the purposes of this study, I focused on the 15 claims received in 2017 where legal liability was established.

Aims:

-Identify the clinical and non-clinical themes that resulted in a claim for compensation

- Disseminate the shared learning and use this as a driver for change

MATERIALS AND METHODS

A retrospective thematic analysis of all 15 closed OASI claims that were reported in 2017, using claims coded as ‘Perineal tear’, ‘Bowel damage’ and ‘Incontinence’

I reviewed the letter of claim, letter of response and expert witness statements as well as any available clinical notes, to identify trends and review the cost to the NHS.

RESULTS

Two cases were excluded because there was no finding of Obstetric Anal Sphincter Injury at the time of delivery or on subsequent investigations. Of the remaining thirteen women, five were documented to have a third degree tear, five a fourth degree tear and the remaining three, an episiotomy or second degree tear, though in two of those, the tear was noted to extend to the anal margin. All bar two woman were primiparous. There were three spontaneous vaginal deliveries with the remainder being instrumental deliveries, mostly forceps, with one ventouse. An attempt at manual rotation was made in three cases, with five ultimately being delivered in an occipito-posterior position. There was an episiotomy in six cases but not in four of the forceps deliveries. Shoulder dystocia occurred in four cases, with two babies having a birthweight above 4kg and these mothers sustaining a firth degree tear. A Consultant was present for or performed the suturing in five cases, with a Consultant Colorectal surgeon being called for one case. The average maternal age at the time of delivery was 31 years.

Claims are commonly bought due to bowel damage or incontinence, with breach of duty mainly admitted for failure to diagnose the correct degree of perineal trauma or failure to repair adequately.

All women attended for follow-up appointments and further investigations. 50% underwent further surgery.

It typically takes a claimant 30 months to bring a claim and then 20 months for damages to be agreed. The sum total to the NHS of these 13 claims was £1,689,392.77, with total costs ranging from £23,385 to £390,640.20.

INTERPRETATION OF RESULTS

The patient characteristics confirm that risk factors for OASI are primiparity, malposition and instrumental delivery. An episiotomy was made in seven cases, thus indicating that this is not protective, however we are unable to comment on the angle of the cut.

In the three cases where the tear was misclassified at the time of delivery, symptoms were first experienced within a week of delivery.

CONCLUSIONS

This review identified 15 cases that were referred in 2017, of which 13 had a demonstrable OASI. We are keen to use our dataset to demonstrate areas of potential learning so that we can help to reduce future incidents and subsequent claims.

Common themes identified were known risk factors for OASI including forceps delivery, occipito-posterior position and shoulder dystocia. Half of the claimants had undergone subsequent surgery or had a plan for surgery once their family was complete. These injuries have long-term effects on every aspect of life, with two claims including psychiatric injury, and all women reporting an impact on their relationships and working life.

The financial costs of litigation are quantifiable and learning lessons to reduce this burden is essential.

I aim to review all 165 OASI claims that have been brought since 2010, where damages have been paid, to look at the population characteristics and pattern of claim, as well as the cost to the NHS, in terms of both financial costs and additional workload.

20 - USE OF BLADDER WALL THICKNESS TO COMPARE THE EFFECTIVENESS OF ANTICHOLINERGICS IN THE TREATMENT OF DETRUSOR OVERACTIVITY.

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INTRODUCTION AND AIM OF THE STUDY

Bladder wall thickness (BWT) is a subject of contention when compared against urodynamics (UDS) for diagnosis of detrusor overactivity (DO), however it is used as a research tool when monitoring the response of a drug in DO. Although BWT has been used to assess the efficacy of anticholinergics, there have been no systematic reviews.

A systematic review was carried out to study the hypothesis that bladder BWT on ultrasound is accurate in assessing drug response in DO.

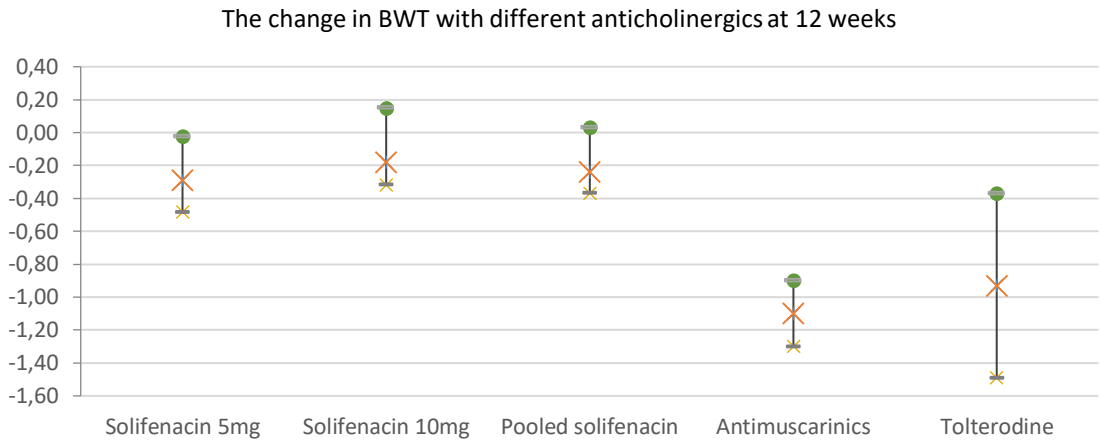
MATERIALS AND METHODS

Online databases were searched from database inception to March 2019, along with seeking expert opinion and search of grey literature. Two reviewers independently selected relevant articles and extracted data on study characteristics, quality and results.

RESULTS

3 studies were identified to be suitable, comparing the efficacy of drug treatment against a placebo or other agents using BWT as a measure of response in 684 patients.

		Mean	Difference to placebo
Robinson et al.	Solifenacin 5mg	-0.29	-0.254
	Solifenacin 10mg	-0.18	-0.084
	Pooled solifenacin	-0.24	-0.69
Panayi et al.	Antimuscarinics	-1.1	n/a
Bray et al.	Tolterodine	-0.93	-0.18



INTERPRETATION OF RESULTS

BWT declines with the usage of anticholinergics, with a greater difference seen tolterodine and combination of anticholinergics in the 'antimuscarinics' group.

The secondary outcomes such as urinary symptoms and patient perception of bladder condition did not reach statistical significance due low power or the return of BWT to <5mm where it is no longer associated with symptoms of overactive bladder.

CONCLUSIONS

BWT is a possible objective measure of response to pharmacological treatment in DO. However, further larger studies are needed to examine the correlation between the BWT and patient reported outcomes of urinary function.

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21 - URODYNAMIC ASSESSMENT IN POST MENOPAUSAL PATIENTS TREATED WITH OSPEMIFENE SUFFERING CONCOMITANT LOWER URINARY TRAC SYMPTOMS (LUTS) AND VULVO-VAGINAL ATROPHY(VVA)

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INTRODUCTION AND AIM OF THE STUDY

Symptoms and severity of pelvic floor disease (PFD) increase after the menopausal transition and worsen with time. The effect of ageing and menopause cannot be separate in midlife women, but the hormonal dependence of genital tract tissues has been advocated in order to explain the appearance of female low urinary tract symptoms (FLUTS) at the menopause. Most of the urogenital dysfunctions such as urinary incontinence, voiding dysfunction and urinary tract infection are increased by declining level of estrogens. Urge urinary incontinence (UUI), urgency, frequency and nocturia are common symptoms in postmenopausal women (PMW). There is evidences that UUI and other FLUTS may improve with local hormonal treatment. There are not clear data regarding the possible role of other menopausal therapies on FLUTS. Ospemifene is a novel selective estrogen receptor modulator (SERM) licensed for oral treatment of dyspareunia, a symptom of VVA. The aim of this study was to evaluate the safety and effectiveness of Ospemifene in the treatment of PMW suffering concomitant FLUTS and VVA.

MATERIALS AND METHODS

This is a prospective open-label intervention trial on consecutive 20 patients suffering concomitant FLUTS and VVA. The study was approved by the local ethics committee and patients gave written informed consent. Urodynamic assessment was done using Urobank Maestro (HC ITALIA) with a double lumen 6-7 F catheters. Patients characteristics and pelvic examination was evaluated at baseline. All patients received oral Ospemifene 60 mg/die for 12 weeks. Objective (Urodynamic study) and subjective 3-days bladder diary, International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form (ICIQ-UI SF) and International Consultation on Incontinence Questionnaire-Overactive Bladder Short Form (ICIQ-OAB SF) data were assessed at baseline and after 12 weeks. Patients were monitored for discomfort and side-effects during treatment.
Statistical analysis was performed using GraphPad Prism 7 (GraphPad Software Inc., USA). Continuous variables were presented with means and standard deviations. D'Agostino and Pearson's test was used to determine the normality of data distribution; in accordance, one-tailed paired t-test was performed to study the outcomes post-treatment. A p-value less than 0.05 was considered significant.

RESULTS

Twenty patients were included. The mean age was 58.5 ± 6.039, the mean BMI was 26.66 ± 4.22.

In table 1, comparison of the voiding diary and quality of life before and after treatment are reported. In brief, all parameters were found significant improved. The mean number of voids in 24 h was found reduced from 11.45 ± 1.73 to 8.45 ± 2.01 (p<0.0001), the urge urinary incontinence in 24 h was reduced from 11.1 ± 2.02 to 8.35 ± 2.13 (p<0.0001), and the mean number of nocturia events was also found reduced from 9.75 ± 2.67 to 7.5 ± 3.17 (p<0.0001). In addition, the mean overall score of ICIQ-UI and ICIQ-OAB before and after treatment was found improved from 14. 5 ± 1.61 to 10.2 ± 1.58 (p<0.0001) and from 44.55 ± 5.62 to 33.3 ± 7.28 (p<0.0001) respectively.

Table 1 Comparison of the parameters related to Voiding Diary and Questionaries' (n = 20)

	Baseline	12 weeks follow-up	*p*
Mean number of voids (24 h)	11.45 ± 1.73	8.45 ± 2.01	<0.0001 ***

Urge urinary incontinence (24 h)	11.1 ± 2.02	8.35 ± 2.13	<0.0001 ***
Mean number of nocturia events	9.75 ± 2.67	7.5 ± 3.17	<0.0001 ***
ICIQ-UI-SF	14. 5 ± 1.61	10.2 ± 1.58	<0.0001 ***
OAB-Q-SF	44.55 ± 5.624	33.3 ± 7.28	<0.0001 ***

Moreover, comparison of different urodynamic data before and after treatment are presented in Table 2. The urodynamic data displayed a statically significant improvement after treatment in the following parameters: Maximum flow rate (Qmax) from 19.05 ± 4.70 to 19.95 ± 4.83 ml/sec (p=0.0086), First Voiding Desire (FDV) from 109.6 ± 27.08 to 147.2 ± 33.15 ml (*p*<0.0001), Normal Voiding Desire (NDV) from 182.8 ± 52.05 to 222.6 ± 56.88 ml (*p*<0.0001), Strong Voiding Desire (SDV) from 275.8 ± 65.84 to 306 ± 62.21 ml (*p*<0.0001), and Maximum Cystometric Capacity (CC) 51.58 ± 16.78 to 57.8 ± 22.55 ml (p=0.0317). However, no differences were found in the following parameters: average flow rate (Qave), Detrusor Pressure Recorded at Maximum urinary flow rate (PdetQmax), Maximum Urethral Closure Pressure (MUCP), and Functional Length (FL).

Table 2 Comparison of the parameters related to Urodynamic Data follow-up (n = 20)

Parameters (unit of measurement)	Baseline	12 weeks follow-up	*p*
Qmax (ml/sec)	19.05 ± 4.696	19.95 ± 4.828	0.0086 **
Qave (ml/sec)	10.05 ± 1.791	10.6 ± 1.759	0.0856 ns
FDV (ml)	109.6 ± 27.08	147.2 ± 33.15	<0.0001 ***
NDV (ml)	182.8 ± 52.05	222.6 ± 56.88	<0.0001 ***
SDV (ml)	275.8 ± 65.84	306 ± 62.21	<0.0001 ***
BC (ml)	341.2 ± 69.17	377.6 ± 64.55	<0.0001 ***
CC (ml)	51.58 ± 16.78	57.8 ± 22.55	0.0317 *
PdetQmax (cm H_2O)	31.50 ± 6.143	31.75 ± 5.428	0.6637 ns
MUCP (cm H_2O)	57.65 ± 9.74	56.75 ± 9.547	0.352 ns
FL (mm)	1.875 ± 0.245	1.88 ± 0.199	0.815 ns

INTERPRETATION OF RESULTS

Treatment with Ospemifene in PMW suffering from FLUTS is associated with noticeable improvement on their quality of life.

Moreover, the urodynamic analysis showed significant improvement in terms of bladder sensibility that could be due to the effect of SERM on urogenital atrophy. However, treatment with Ospemifene in PMW did not change the detrusor overactivity.

CONCLUSIONS

These preliminary data suggest a potential role of SERM to improve urinary urgency symptoms in PMW with VVA.

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22 - HEALTHCARE PROFESSIONAL CHOICE OF SURGICAL TREATMENT FOR STRESS URINARY INCONTINENCE

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INTRODUCTION AND AIM OF THE STUDY

In July 2018, NHS England, introduced a pause on vaginal mesh, including the tension free vaginal tape (TVT) for treatment of stress urinary incontinence (SUI). The TVT was the most popular surgical treatment for SUI, making up 81% of procedures between 2000-2017 (1). The country is still awaiting reversal of the pause. This depends on meeting certain criteria, to bring about the safe reintroduction. NICE guidelines (2) recommend TVT as one of the surgical options for SUI. We therefore have two government bodies with conflicting advice, causing confusion for both doctors and patients.

The aim of our study was to investigate healthcare professionals choices for surgical treatment of SUI (for themselves or a female relative), if conservative measures failed.

MATERIALS AND METHODS

The urogynaecology department at our tertiary level hospital devised a questionnaire using SurveyMonkey. This was distributed via email to 1058 healthcare professionals of different medical backgrounds. It included doctors, nurses, midwives and physiotherapists. The surgical options were based on the NICE guideline and its patient decision making aid. We also used surgical information from the British society of Urogynaecology (BSUG) and British association of urological surgeons (BAUS).

RESULTS

We received 214 responses (20% response rate). The majority of responses were from consultants (48%) and were obstetricians and gynaecologists (26%). Seventy nine percent were female. Forty five percent had no previous knowledge of the surgical options. Some healthcare professionals (55%) did have prior knowledge on the surgical options; 25% autologous fascial sling, 43% colposuspension, 47% mid-urethral sling, 31% urethral bulking agent.

Table 1 shows which surgical option was chosen based on the procedure description and success rates and again based on specific complications as per NICE decision aid (2), BSUG and BAUS. With the complications in mind, 22% would avoid surgery altogether and continue conservative treatment.

Just under a quarter (23%) of our healthcare professionals had or had relatives who sought treatment for SUI. The majority had conservative treatment such as physiotherapy (53%). The most popular surgery healthcare professionals had, was a mid-urethral sling (30%). Five percent tried duloxetine.

Table 2 shows the results comparing gynaecologists with other medical specialties. Only 4% of gynaecologists chose conservative treatment after considering the complications.

Comparing females vs males, the mid-urethral sling was most popular in both sexes, when chosen based on description and success (42% and 52% respectively) and specific complications (25% and 34% respectively). Conservative treatment was chosen by 24% of females and 15% of males.

Table 1: surgical options chosen

SUI surgical option	**% chosen based on description and success rate**	**% chosen based on specific complications**	**% change**
Autologous fascial sling	24%	16%	33% reduction

Colposuspension	19%	13%	32% reduction
Midurethral sling	44%	26%	41% reduction
Bulking agents	13%	23%	77% increase

Table 2: Surgical options of Gynaecologists compared to other specialties

	Gynaecologist	**Other healthcare professionals**
Most popular surgical option	Midurethral sling (44%)	Midurethral sling (44%)
Most popular option based on complications	Midurethral sling (35%)	Conservative treatment (29%)

INTERPRETATION OF RESULTS

The midurethral sling was the most popular surgical option for SUI for healthcare professionals, after considering the procedure, its success and even after considering complications.

CONCLUSIONS

This is the first study evaluating healthcare professionals surgical choice for SUI. Interestingly despite the negative media publicity and NHS pause on midurethral slings, it was still the most popular choice before and after informing of specific complications. The urethral bulking agent was the only surgical treatment which increased in popularity after considering complications, which is in keeping with an increase in its use between 2015-2017 (1).

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23 - RETROSPECTIVE REVIEW OF MIDURETHRAL AND VAGINAL MESH RESECTION- A CASE SERIES

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Objectives

The aim of our case series is to assess the effectiveness of surgical removal of MUS/vaginal mesh on patient pain levels. Our secondary aim is to report on functional outcomes including SUI recurrence, urinary function, anorectal function, sexual function and quality of life.

Methods

This is a retrospective chart review of all patients who undergoing MUS/vaginal mesh removal at a tertiary care referral centre from March 2017 to Dec 2019. Patients were identified from the electronic medical records system using their operative billing code. Preoperative evaluation included a standard history, physical examination, and a multi-channel urodynamic test, uroflowmetry, post-void residual assessment and cystoscopy. The following questionnaires were completed by some patients; Pain catastrophising scale (PCS), Pelvic Floor Distress Inventory (PFDI) SF-20, Female Sexual Function Index (FSFI) and McGill pain Index. Surgical technique was individualised to the type of MUS/vaginal mesh used, previous revision surgery and associated symptoms and complications.

Results

MUS/vaginal mesh were removed in a single academic institution by a single surgeon trained in urogynaecology and minimally invasive surgery, or by a fellow supervised by said surgeon. A total of 28 women underwent mesh removals within the inclusion period, but 3 did not attend for their 6-week post-op visit.
Eleven (39%) had a TOT, 10 (36%) had a retropubic sling, 3 (11%) had a mini sling and one (3%) had a mesh sling placed by laparotomy 20 years ago, 2 (7%) had an anterior mesh (Prolift) and 1 (3%) had a sacrocolpopexy. Table 1 outlines the presenting symptoms and post-operative symptoms. Twenty-three (82%) patients reported becoming symptomatic immediately post original MUS procedure. The remaining five cases reported becoming symptomatic between 10 months to 20 years post-operatively.
Ten (36%) of women had previously undergone a partial vaginal sling excision before referral.
Mean time from MUS implantation to removal of was 6.85 years. Retropubic slings were resected with combined retropubic and laparoscopic approach and TOTs were removed through a combined groin and vaginal approach. Mean follow up was 8.62 months (range 6 weeks- 3 years). Three patients did not attend for follow up. Table 2 shows the pre and post-operative symptom scores. Pre and post-op questionnaires were available only for 8 patients, which did not allow for a paired comparison. Sixteen patients completed questionnaires pre-operatively and 14 completed post-operative questionnaires.
Median preoperative Visual Analogue Scores (VAS) for pain were 6, with median VAS pain score being 6 for TVT and TVT-O respectively. Median postoperative VAS pain score was 2, and was 3.5 and 2.5 TVT and TVT-O respectively.
Eight patients (32%) of patients reported subjective improvement in symptoms, 4 (16%) reported cure of pain post-operatively, while 4 (16%) did not experience any improvement and 9 (36%) reported new/worsening pain symptoms.

Conclusion

Radical or complete MUS/vaginal mesh excision is associated with a high complication and SUI recurrence rates which are counter-balanced only by a 48% improvement rate at short-term follow up. This data is pertinent in appropriately counselling these women about risks and benefits of complete mesh excision versus conservative management.

Table 1 – Pre and post resection symptoms

Presenting symptoms	Pre op N=28 (%)	Post op N=25 (%)
OAB/frequency/nocturia	16 (53)	12 (48)
SUI	15 (50)	18 (72)
De novo SUI		7 (28)
Pelvic/vaginal pain	22 (73)	15 (60)
Groin pain	12 (40)	10 (40)
Dyspareunia	16 (53)	6 (24)
Dysuria/recurrent UTI	5 (20)	5 (20)
Vaginal mesh erosion	3 (10)	2 (8)
Systemic symptoms	1 (3)	0
Osteomyelitis	1 (3)	0
Pudendal/sciatic neuropathy	3 (10)	2 (8)
Genitofemoral neuropathy	1 (3)	0
Urinary retention/self-catheterisation	2 (8)	1 (4)
Pelvic abscess/seroma formation	0 (0)	4 (16)
Cellulitis/Skin dehiscence	0	4 (16)
Rectal/foreign body sensation	0	2 (8)
Buttock pain	0	1 (4)

Table 2 – Qualitative Questionnaires- median score

	Pre-op n=13 (46%)	Post-op n= 11 (48%)
Pain catastrophising score	21	17
PDFI SF-20	175.5	152
FSFI	7.2	3.6
McGill Pain index	23.5	23

24 - INTERIM ANALYSIS OF A EUROPEAN PROSPECTIVE OBSERVATIONAL STUDY EVALUATING PATIENT REPORTED OUTCOMES OF THE SINGLE-INCISION SLING ALTIS IN UNCOMPLICATED STRESS URINARY INCONTINENCE POPULATION.

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INTRODUCTION AND AIM OF THE STUDY

Single-incision slings (SIS) aim to surgically correct stress urinary incontinence (SUI) with optimal cure and minimal morbidity. In 2014 the FDA ordered post-market controlled studies under section 522 to provide additional safety and efficacy data on SIS. In Europe, a prospective descriptive case-series study (Clinicaltrial.gov NCT 04115605) was initiated to understand real-world use, patient-reported effectiveness and monitor surgery-related morbidity following Altis adjustable SIS (Coloplast A/S, Denmark) implantation.

MATERIALS AND METHODS

We report a prospective multi-center (33 sites) study with a planned follow-up through 36 months in women with SUI. Ethics committee approvals were obtained. Women with symptomatic SUI undergoing Altis SIS surgery were eligible and defined the safety population. Primary effectiveness outcome was “surgical success”, which was achieved if the patient responded “much better” or “very much better” to the Patient Global Impression of Improvement (PGI-I) questionnaire. Objective cure was defined as a negative cough stress test at the last follow-up post-operative visit. Surgery-related events were reported by the sites as complications including any side-effects (SE) even if they did not result in a deviation from the ideal postoperative course, any technical observations. Complications were adjudicated by a clinical evaluation committee, and categorized using Clavien-Dindo (CD) grading system when possible. Primary safety composite endpoint (SCE) was the rate of undesirable side-effects (possibly device and/or procedure-related harm) reported as severe by the site or adjudicated as serious (death or serious deterioration in state of health) or as resulting in a CD grade greater than II through the planned 36-month follow-up. Secondary outcomes were assessed using validated disease specific, quality of life and patient satisfaction questionnaires (ICIQ-UI-SF, PISQ-12 and I-QOL). We retrospectively selected cases responding to the criteria of uncomplicated pure cases of SUI. We defined pure SUI patients as those with no history of previous pelvic surgery, no neurogenic lower urinary tract dysfunction or related treatment, no history of recurrent urinary tract infection, a positive cough stress test (CST) at baseline, no genitourinary prolapse greater than stage 1 at examination, *normal urodynamic when data are available.* Descriptive statistics for continuous variables will be presented with N, Mean, SD (standard deviation), Median, Q1-Q3 (first and third quartile), where N denotes the number of subjects contributing with non-missing data. For discrete variables, descriptive statistics will be presented with N and percentage of the number of subjects contributing with non-missing data in the various categories of the variable.

RESULTS

The analysis includes initially 549 women. Uncomplicated pure cases of SUI represent 32% of the global population (n=176). Baseline characteristics for this population showed a median (IQR) age of 48 years (42-57,5), BMI of 23.6 (21,3-27), parity of 2 (2-3), duration of symptoms of 4.7 years (2,3-8.6). 70.8% of patients reported to be active or participating in sports. Severe incontinence was reported by 20,6% in IQOL-questionnaire. Per baseline ICIQ-UI score (table1), SUI may be categorized in moderate (9-12)-severe (13-18) level (ref 1). The baseline mean of pad used per day (PPD) was 1,78 (1,4). At the last postoperative visit (median 17.6 month (4,1-28,5), CST was negative in 98,2%. The median duration of the follow-up was 24,7 months [12-35]. Surgical success was achieved in 93,1% of patients (“very much better” 70,9% and “much better” 22,2% improved). Comparison with baseline of questionnaires is summarized in table 1. The mean number of PPD at the last follow-up decreased by -1.4 (1.4).

var	N	Last Follow-up	Baseline	Difference	p Wilcoxon’s signed rank test
ICIQ-UI-SF total score	150	2.29 (3.5)	12.91 (3.7)	-10.6 (4.7)	<0.0001
PISQ-12 total score	125	41.48 (6.1)	39.62 (6.4)	1.85 (5.1)	<0.0001
I-QOL total score	153	92.80 (12.2)	60.57 (21.4)	32.22 (23.3)	<0.0001

I-QOL Avoidance & limiting behaviors score	153	91.64 (12.9)	63.38 (21.2)	28.27 (22.4)	<0.0001
I-QOL Psychosocial impacts score	153	95.95 (11.3)	67.84 (24.0)	28.10 (25.7)	<0.0001
I-QOL Social Embarrassment score	153	89.0 (15.7)	43.0 (25.9)	46.0 (29.2)	<0.0001

The safety composite endpoints evaluated indicate 6 serious side-effects (12.8% of 47 post-operative SE) seen in *6* patients (3,4%). Two urinary retentions (CD grade I and III), 1 non-urogenital pain (CD grade II), 1 vaginal mesh exposure (CD grade I), 1 vaginal thread exposure (CD grade III) and 1 urethral mesh extrusion (CD grade III) were reported. Surgical re-intervention for SE was performed in 3 of these patients (1,7%) and included one mesh revision, one vaginal partial mesh excision and one vaginal complete mesh excision. 89,9% of the population met the composite endpoint combining feeling of improvement measured as much and very much better improved on PGI-I with no severe or serious or resulting in surgical reintervention SE (CD grade III) at the last follow-up that could reflect patient expectations from continence procedure.. In addition, 93,1 % of patients reported to be satisfied or very satisfied and 98,7% would recommend this operation to a friend.

INTERPRETATION OF RESULTS

This European-wide study is the largest prospective study evaluating the outcomes of an adjustable SIS as surgical therapy for SUI and generates robust real-world outcome data that are truly generalizable as they have been comprehensively collected from multiple countries. This approach was associated with large treatment effect, as measured by validated patient-reported outcomes questionnaires without any impact on sexual function (PISQ-12). The main significant difference was measured in I-QOL with 53% increase of total score and an incremental value of 107% in social embarrassment (SE) domain (ref.2). The ICIQ-UI-SF score changes of – 10 points exceeds the threshold of – 5 points that can be considered clinically meaningful (ref.3). We found low rates of serious incidents that reflects favorably against the existing literature. We are confident that Altis SIS is a safe procedure with no excess of mesh-related complications, organs injuries, de novo bladder storage symptoms, voiding symptoms or pain.

CONCLUSIONS

In this second analysis, Altis has intermediate term subjective and objective cure rates that exceed 93% and a re-intervention rate of less than 2% in patients with non-complicated stress urinary incontinence. Further follow-up of patients is ongoing and will be reported.

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25 - A CONSERVATIVE TREATMENT FOR STRESS INCONTINENCE: EVIDENCE SO FAR AND POSSIBLE MECHANISMS OF ACTION

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INTRODUCTION AND AIM OF THE STUDY

The concept of a garment with pelvic floor support is relatively new, and it is postulated that the additional positive pressure provided would reduce stress urinary incontinence (SUI): Japanese research on a support garment demonstrated significant bladder neck elevation on MRI in women with SUI, and this group later showed a comparable effect to pelvic floor muscle training[1]. EVB™ garment was custom designed using engineering principles for women with SUI: its varying elasticity provides compression to gluteal muscles and thighs while providing nonelastic compression uplift and support to pelvic floor muscles, achieved mechanically by suspending the central section from a high waistband, resulting in a hammock or sling effect secured during motion. The mix, panelling and layering of the fabrics act together to encourage the pelvis into a neutral, aligned position.We present the available scientific evidence on EVB™ shorts, acquired in four crossover studies conducted in Irish academic centres, and initial translabial ultrasound findings. The aim was to examine the impact of EVB™ on various aspects of SUI, running posture, and bladder neck height.

MATERIALS AND METHODS

1. **2014 RCSI school of Physiotherapy** carried out pad tests before & after vigorous exercise on 7 women with mean age 45y & SUI over 2 visits in crossover study wearing EVB™ or generic shorts.
2. **2015 DCU School of Health and Human Performance (PhD project)** measured physiological and metabolic parameters and SUI in 16 women in their 40's with SUI over 2 visits. In a crossover study wearing either EVB or generic shorts, they ran on a treadmill.
3. **2018 Trinity College Dublin School of Nursing/Midwifery** randomised 34 postnatal women with SUI to wear EVB™ or generic shorts for 3week periods in double-blind crossover fashion.
4. **2019 UCD School of Biomedical engineering (Masters project)**, a crossover treadmill study of 10 female runners in their 20's wearing EVB™ shorts or generic sportswear. Their gait was recorded by video cameras and analysed.
5. **2020 Physiotherapy Study:** inhouse testing of volunteers using transperineal ultrasound imaging in standing and lying with and without EVB™. An 8cm slit in the gusset was required in order to pass a probe and make contact with the perineum. Bladder neck height was measured by identifying a reference line from inferior, posterior pubic symphysis and measuring to the bladder neck in mm.

RESULTS

1. There was a reduction in leakage in EVB™ support shorts though not statistically significant ($p>0.134$). Mean pad weight was reduced from 17.6g wearing generic to 8g with EVB™ shorts.
2. There was no significant difference in physiological, metabolic or perceptual parameters. Confidence rating scores were higher ($p<0.001$) and a lower number ($p<0.03$) of participants reported no leakage while wearing EVB™ compared to generic shorts. Although enjoyment scores were higher following exercise wearing EVB™, the difference was not significant ($p< 0.07$).
3. 28/34 or 82% of women wearing EVB™ shorts helped them to feel confident, supported and secure while exercising for at least 30 minutes twice/week, compared to 45% women wearing generic shorts.
4. EVB™ shorts were shown to alter abduction/adduction, and significantly reduce contralateral pelvic drop ($p=0.04$)
5. Table 1 and Figures 1,2, indicate that EVB™ elevates the bladder neck, prevents it descending as far on bearing down or Valsalva, and improves thes maximum voluntary contraction achieved.

Table 1 *– Mean change in bladder neck height*

	Crook with shorts	Stand with shorts
Rest	+1.15mm	+9.45mm
Max Vol Contraction	+2.7mm	+5.4mm
Valsalva (Bear down)	+5.9mm	+17.8mm

Fig 1 *Bladder neck height in standing with shorts off a & on b showing visible increased bladder neck height*

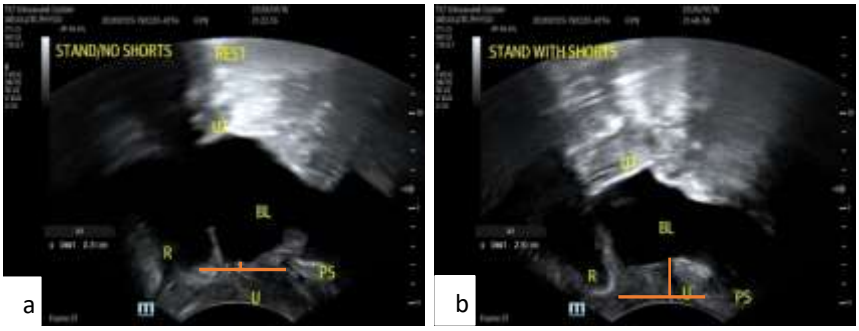
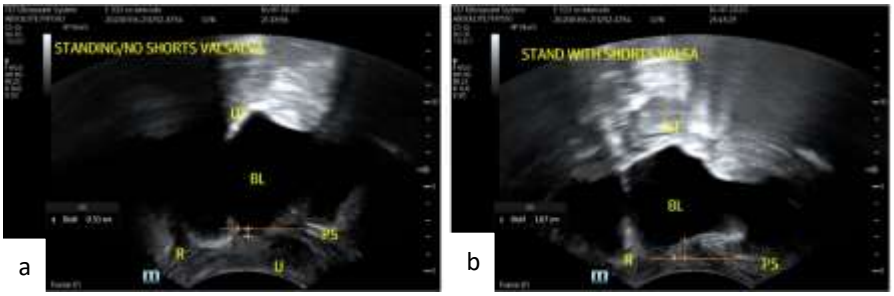


Fig 2 *Valsalva with no shorts on (a) in standing results in organ descent below level of pubic symphysis versus with shorts on (b) bladder neck does not descend as far as symphysis*



INTERPRETATION OF RESULTS

Though conclusions are limited because of small numbers, studies to date demonstrate that EVB™ reduces urinary leakage and increases confidence and sense of support in women regularly exercising. Through targeted support for the lumbopelvic and pelvic floor areas, there may be potential benefits to runners in reducing sports injuries involving the knee joint particularly.

CONCLUSIONS

EVB™ may exert its effect through one or more of a variety of mechanisms : simple **positive pressure upwards** as described, resulting in bladder neck elevation: **proprioceptio**n, as per how a compression bandage around a joint exerts its effect to strengthen muscles: shortening the **length of the genital hiatus**: indirectly through **gait & posture change**s: **offloading intra-abdominal pressure** rises via the elastic parts of the garment: via an unconscious effect **awareness of pressure** on the perineum: pressure on lumbar sacrum to activate the common sacral nerve root supply: or allowing **women to become more active**.

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26 - MEDIUM AND LONG TERM SUCCESS RATE OF BULKAMID® BLADDER NECK INJECTIONS IN OVERWEIGHT AND OBESE PATIENTS

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INTRODUCTION AND AIM OF THE STUDY

Urinary incontinence is a very common and debilitating problem affecting about 50% of women at some time in their lives (1). Several l studies showed that obesity is a strong independent risk factor for developing urinary incontinence. Each 5-unit increase in BMI is associated with about a 20% to 70% increase in the urinary incontinence risk (2).

Urethral bulking is a relatively non-invasive surgical treatment option for stress incontinence but long-term outcome data in overweight and obese populations is limited.

The aim of this work was to explore success rates of Bulkamid® bladder neck injections for stress incontinence, at 6 and 12 months follow up, in patients with BMI above 25.

MATERIALS AND METHODS

We retrospectively followed 42 consecutive patients with BMI greater than 25, who had undergone Bulkamid ® bladder neck injections for stress incontinence at our local hospital between 2017-2019.93%(n=39) patients had urodynamic stress incontinence and 7%(n=3) had mixed UI. The mean BMI was 32 (range 26-47). 39 patients participated in a standardised telephone review to follow up on their current clinical symptoms and their severity at 6 and 12 months post-surgery. ICIQ-UI (short form) and Patient Global Impression of Improvement Scale (PGI-I) were used to score severity of the symptoms.

RESULTS

At 3 months follow up 60% of our cohort of 42 patients reported some degree of an improvement. The mean preoperative ICIQ UI score was 17(range 9-21). At 3 months, the average ICIQ-UI score was 11 (3-21).

At 6 months, 51% of 39 patients who had Bulkamid ® reported some degree of improvement. On questioning 49% (19) patients reported their symptoms being the same as prior ,8% (3) little better,26% (10) much better and 18% (7) still very much better. At 6 months follow up average ICIQ score was 13(range0-21).

At 12months ,47% of patients (n= 32, 76% of our total cohort) reported some degree of improvement. On questioning 53% (n-17) reported their symptoms were the same ,19%(n-6) reported their symptoms to still very much better, 9% (n-3) much better and 19% (n- 6) little better than prior the Bulkamid ® At 12 months follow up, the average ICIQ score was 13(range 0-21) from 16 (range 9- 21).

21%(n=9) patients required further continence surgery.

INTERPRETATION OF RESULTS

Although the success rate was at 3 months was 60% this reduced to less than 60% at 6 months and further reduced to 47% after 12 months.

CONCLUSIONS

Our study concludes that though the initial success rate of Bulkamid ® is comparable to the quoted success rate of 60% in patients with normal BMI (3), unfortunately this is not sustained on longer term follow up. This may impact on the choice of surgery for stress incontinence in this group of patients and appropriate counselling is needed.

The epidemic of obesity is now recognised as one of the most important public health problems facing the world today and our study although retrospective brings more data about effectiveness of bulking agents in

this patient's group. Larger studies are needed to determine the most effective treatment for stress urinary incontinence in this group of patients.

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27 - DO WE NEED ANTIBIOTICS IN ORDER TO PREVENT URINARY TRACT INFECTION AFTER MIDURETRHAL SLING SURGERY?

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INTRODUCTION AND AIM OF THE STUDY

Urinary tract infections (UTIs) are one of the most common reason for antibiotic prescriptions among women. At least 50% of women will develop one UTI episode during life. What is more it has been observed that 27 percent of women will develop at least one culture-confirmed recurrence within the 6 months following the initial infection and therapy. However urinary catheterization is an essential component of many gynecological surgical procedures, including also mini-invasive midurethral slings placement, but this obviously increases the risk of urinary tract infection. On the other hand decreasing catheterization duration significantly lowers probability of catheter associated urinary tract infections (CAUTI), but estimated risk is still as high as 38% in the first 6 weeks following catheter removal even among women undergoing relatively short-term catheterization for elective gynecological surgery. Midurethral slings (MUS) are still consider as golden standard in the surgical treatment of stress urinary incontinence with estimated rate 198.3 per 100,000 person-years annually in US. Since majority of gynecological surgeons introduced Foley catheter into the bladder during this type of surgery one of the possible complications should be undesired CAUTI. Nevertheless bacterial pathogens causing CAUTI during and especially following hospitalization are increasingly resistant to antibiotics and often require complicating treatment with markedly increasing costs. Therefore, introduction into clinical practice any non antibiotic regimens decreasing the possibility of hospital acquire UTI during commonly performed surgical procedures is of pivotal importance and can lead also to decreasing of bacterial strains resistant to antibiotic. effective non-antibiotic approach in UTI treatment or prophylaxis remains very attractive for both as physicians and patients. One of the potential options to achieve this goal could be the usage of Canephron N (Bionorica, Germany), which is a phytotherapeutic drug with diuretic, spasmolytic, anti-inflammatory, antibacterial, and nephroprotective properties. The aim of the study was to compare the effectiveness of herbal product Canephron N vs ciprofloxacine in the prevention of postoperative lower urinary tract infections after the transobturator monofilament sling (T-sling-Hernia Mesh, Italy).

MATERIALS AND METHODS

The time-series study involved patients who underwent T-sling procedure due to SUI in single Gynecological Center from January 2016 to December 2019. The Institutional Review Board approved the study protocol and all participants gave written informed consent. The diagnosis of SUI was based on a clinical examination, which included a detailed interview including ICIQ-SF questionnaire, voiding diary and gynaecological examination with a positive cough test. Patients were assigned in a 1:1 ratio into both study groups (group A – patients receiving 500 mg of ciprofloxacin 3 times daily for 3 consecutive days after surgery; group B – participants receiving Canephron N 5 ml taken orally three times daily for 3 weeks). Patients were qualified to participate in the study after exclusion the presence of other gynecological disorders, such as fibroids, ovarian cysts or a significant degree of Pelvic Organ Prolapse (only patients with grade 0 or 1 according to POPQ were qualified to participate in the study). All procedures were performed under short-term general anaesthesia. All study participants received one dose of an intravenous antibiotic 1 g cefoxime 30 min prior to the start of the surgical procedure, including urinary catheter insertion. The Foley catheter was removed 3 hours after procedure. Patients were asked to spontaneously void when they felt a normal need to urinate after removing Foley's catheter. The definitions of UTI and bacteriuria used in this study were as follows: for postoperative UTI: dipstick test and if positive urine culture when : 1) $\geq 10^5$ colony forming units (cfu/ml) or 2) $\geq 10^4$ cfu/ml, with clinical indications of UTI such as pyrexia (38ºC) or suprapubic tenderness. The primary endpoint was the percentage of participants who experienced clinically diagnosed and treated UTI within 6 months after surgery whether or not results from a urine culture were available. Diagnosis and treatment were up to the treating physician. Secondary endpoints included the effectiveness of the treatment by means of gynaecological examination together with cough test with comfortably full bladder (200-250 ml) followed by sonographic PVR

assessment after spontaneous voiding. Moreover, subjective evaluation of surgery effectiveness were performed by means of ICIQ-SF questionnaire and UDI-6 and IIQ-7 questionnaires in order to assess the impact of surgery on preexisting incontinence. The obtained results were analyzed statistically with the use of STATISTICA 10.0 PL software.

RESULTS

Both groups were homogenous for age, type of operation (only TOT outside –in) and severity of illness as indicated by ICIQ-SF questionnaire. –Table 1.

Table 1. Patients demographic data.

	Canephron N group n=264	Ciprofloxacine group n=264	P
Age (years), M ± SD	53,45±11,54	52,76±12,43	NS
BMI (kg/m^2), M ± SD	28,02±3,95	27,71±4,29	NS
ICIQ Short Form	14,35 ± 4,08	14,98 ± 3,30	NS

After analysis of the collected data, it was found that in group of patients receiving ciprofloxacin 29 patients (10,98%) had urinary tract infection ,while in the group of patients receiving Canephron N UTI was observed in 36 patients (13,64%). By means of the chi square test, no statistically significant differences in the effectiveness of UTI prevention by both drugs were proved

INTERPRETATION OF RESULTS

Prophylaxis of UTI with Canephron N may be considered a good and safe alternative to antibiotic prophylaxis used after T-sling procedure.

CONCLUSIONS

Therapy with phytodrug can be perceived as an attractive option in reducing of antibiotic consumption among female patients.

28 - SINGLE-INCISION MIDURETRHAL SLING UNDER LOCAL ANESTHESIA IN FEMALE SURGICAL TREATMENT FOR SUI: PRELIMINARY RESULTS

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INTRODUCTION AND AIM OF THE STUDY

Female stress urinary incontinence is a prevalent and costly condition for women and the estimated lifetime risk of surgery is 13.6% by the age of 80. The mainstay of treatment of SUI is the insertion of tension-free suburethral sling. Single-incision miduretrhal sling technique (SIMS) was developed with the intention of shorten the insertion points through a single vaginal incision and the ability to perform the procedure under local anesthesia with the patient participating actively the whole time. It is of outmost importance, however, to prove that the SIMS tapes are equally efficacious to the traditional tension-free suburethral slings in the treatment of SUI. The aim of this study was to show the preliminary post-operative results of the treatment of SUI with SIMS slings in terms of immediate complications and short-term efficacy.

MATERIALS AND METHODS

Cross-sectional cohort study conducted in a Urogynecologic unit of a tertiary academic center from 12/2019 to 07/2020. All women who had consecutively surgical treatment with single-incision miduretrhal sling performed under local anesthesia were included. Patients who had previous anti-incontinence surgery were excluded. All the patients had (i) full urogynecologic history and clinical examination, (ii) response to specific conditions standardized questionnaires (ICIQ-UI SF, ICIQ-FLUTS, ICIQ-VS, STAI), (ii) 2D-Pelvic Floor Ultrasound (PFUS) and 3D-PFUS (Voluson S10, General Electric) including post-void residual (PVR) measurements and evaluation of the urethral mobility, and (iii) pre-operative multichannel urodynamics. Mini-slings were inserted under local anesthesia in dorsal lithotomy position. The position of the tape was achieved after filling the bladder with 200-250 ml of N/S and performing a cough stress test. A 10-item visual analogue score (VAS) was used to measure the pain during and after the procedure. The Foley catheter was removed 3 hours after the procedure and the patients were discharged 6 hours post-operatively after voiding with a normal PVR. Follow-up was performed at 3 weeks and 3 months with clinical examination, stress test, 2D & 3D PFUS including PVR and sonographic allocation of the mini-sling, and standardized questionnaires. Statistics were performed using Microsoft EXCEL and JASP {JASP Team (2019). JASP (Version 0.11.1) [Computer software], Amsterdam, Netherlands}.

RESULTS

Twenty-two patients were included in the study of which 14 were evaluated in the 3 months follow-up. The mean age was 60.1±12.6 years-old, the mean BMI 30.8±5.3, menopause began at 50.0±3.0 years-old, and the mean parity was 2.5±1. Pre-operatively, 77.2% (17/22) of the patients had severe and moderate SUI and 50.0% (11/22) had bladder neck hypermobility. Regarding the ICIQ-UI SF the 54.5% (12/22) had a severe negative impact on their quality of life, the 63.6% (14/22) mentioned at ICIQ-FLUTS a moderate and severe incontinence symptoms and only the 31.2% (7/22) mentioned that they were simultaneously

suffering from vaginal symptoms as well (ICIQ-VS). All participants 100% (22/22) had severe anxiety according to STAI questionnaire. The mean surgical time was 21.8±5.5 minutes with 3/10 at pain scale. Four patients mentioned that they felt uncomfortable during the incision of local anesthesia and three of them during the insertion of the sling. All participants would recommend the procedure to a friend. At discharge, all participants had negative stress test with <10ml PVR. At 3 weeks follow-up, stress test was negative in 95.4% (21/22) without any sign of local erosion and no further complaints reported. The 40.9% (9/22) had still bladder neck hypermobility and 22.7% (5/22) showed the ultrasound sling hypermobility. The PGI-I score 1 and 2 was found in 77.2% (17/22) and the PGI-S score 1 was found in 59% (13/22).

At 3 months follow-up, stress test was negative in 92.8% (14/14), PGI-I score 1 and 2 was found in 85.7% (12/14), PGI-S score 1 was found in 71.4% (10/14). No mesh complication was recognized in any participant.

INTERPRETATION OF RESULTS

In this study, we used the single-incision mini sling procedure with the subjective success rate was 59% with a short follow-up duration. There was not any procedure-related complication mentioned and all questionnaires results were found to be significantly (?) improved postoperatively.

CONCLUSIONS

In an unselected cohort of incontinent women, SIMS appear to be efficacious and without increased complication rates in the short and medium-term follow-up for the treatment of female SUI.

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29 - PUDENDAL NEUROPATHY ASSOCIATED WITH POSTPARTUM FAECAL INCONTINENCE

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INTRODUCTION AND AIM OF THE STUDY

The most common cause of faecal incontinence in women is rupture of the anal sphincter complex following vaginal childbirth—obstetric anal sphincter injury. Some women, however, experience anal incontinence following childbirth, even if they avoid an obstetric anal sphincter injury at the time of delivery. As the pudendal nerve supplies the external anal sphincter, urethral sphincter, and perineal muscles, a nerve injury during childbirth has been suggested as a possible cause of faecal incontinence in women with an intact sphincter complex (1). Traction during the second stage of labour or compressive injury at the level of the ischial spines have been suggested as possible aetiologies of pudendal neuropathy. (1)

We hypothesised that women presenting with anal incontinence—flatal and/or faecal incontinence—who had an intact sphincter complex on ultrasound, would have some degree of pudendal neuropathy. Thus, the aim of this study was to review pudendal nerve studies of women referred to a tertiary-referral perineal clinic with faecal incontinence.

MATERIALS AND METHODS

This was a cross-sectional study using anonymized data from an institutional hospital database. Women were included if they were referred with flatal or faecal incontinence or both. The information recorded included age, parity, birth weight, mode of delivery. As part of their initial clinic attendance, each patient completed a bowel continence questionnaire(2) and underwent endoanal ultrasound. Only women with both intact internal and external anal sphincters were included in this study.

All pudendal nerve studies were performed by a subspecialist neurophysiologist and followed recommended protocols. Pudendal nerve studies were reviewed and results were recorded for both muscle recruitment and clitoral-anal-reflex (CAR). Muscle recruitment was recorded as a percentage of normal, and CAR was recorded as either normal or elevated.

RESULTS

Between January 2005 and December 2019, pudendal nerve studies were performed in 33 women who were referred with symptoms of anal incontinence. Ten women (30%) were referred from their general practitioner, eight (24%) were referred from our institution, five (15%) were referred from physiotherapists, and the remaining ten (30%) were from other gynaecological units. The length of time between referral and their index delivery was available for 31/33 (94%) women. One-fifth (6/31, 19%) of women were referred less than six months postnatal, while just under a third (9/31, 29%) waited longer than five years after delivery. Four (13%) women were referred between 6 – 12 months postnatal, eight (26%) were referred between 1 – 3 years after delivery, and four (13%) were referred between 3 – 5 years postnatal.

The median age was 38 (mean 41, range 26-73), and median parity was 2 (range 1-6). Information on the mode of delivery was available for 32/33 women (97%). Half of women were delivered by forceps (16/32), 9% (3/32) were delivered by vacuum, 38% (12/32) had a spontaneous vaginal delivery, and there was one (3%) vaginal breech delivery. Birthweight was available for 23 women (23/33, 72%) and the median birth weight was 4111g (range 2494 – 5103g). Length of the second stage of labour was available for only 12 cases (38%). Of those that were available, the length of the second stage of labour was greater than two hours in 10/12 cases (83%). Perineal trauma was classified in 27 (82%) women; of which, 18 (67%, 18/27) had an episiotomy, 8 (30%, 8/27) had a second-degree tear, and one woman had an intact perineum.

The median continence score was 9 (mean 10, range 2 – 20). All women had either flatal or faecal incontinence. Two-thirds of women complained of flatal incontinence (22/33, 67%), while 82% (27/33) of women complained of faecal incontinence. Faecal urgency—when defined as being able to hold for less than five minutes—was seen in 67% (22/33) of women. Similar levels (21/33, 64%) of soiling were reported. Most women (22/33, 67%) reported normal perineal and sexual sensation, while ten (30%) women had some degree of decreased sensation, of which, one reported completely absent perineal and sexual sensation. One woman reported anorgasmia.

Pudendal nerve studies were performed in all women. Seven (21%) EMG studies were reported as normal for the left pudendal nerve, and five (15%) women had a normal EMG on the right side. Asymmetric pudendal neuropathies were seen in 20 (61%) women. Of these, the right pudendal nerve had worse recruitment in 13 (39%, 13/33) cases. Sensory thresholds were normal in 28 (85%) cases on the left, and 27 (82%) cases on the right.

INTERPRETATION OF RESULTS

This study has shown a high degree of pudendal neuropathy in women referred with faecal incontinence who have an intact sphincter. These neuropathies are mostly asymmetric in muscle recruitment, but sensory thresholds are broadly normal. Half of women were delivered by obstetric forceps, reinforcing the hypothesis of a traction/compression injury during the second stage of labour. Despite this, there remains a sizeable proportion of women with anal incontinence who had a spontaneous vaginal delivery. Similarly, despite a macrosomic (>4kg) median birthweight, pudendal neuropathies were seen in women with infants weighing less than 2500g.

The prevalence of asymmetric nerve injury may reflect a preponderance for nerve injury on a particular side, though the numbers presented here are too small to draw a definitive conclusion. It is possible that those with an asymmetric nerve injury may have worse symptoms, as the external anal sphincter struggles to contract evenly. Hence, the absolute degree of neuropathy may be less important than laterality, though further research is required in this area.

Symptoms reported by women with faecal incontinence appear to follow the distribution of the pudendal nerve, with almost a third of women reporting decreased sensation either on the perineal skin or during sexual intercourse. This is similar to reports analysing pudendal nerve injuries in professional cyclists and underpins the importance of the pudendal nerve is not just in maintaining continence, but in global pelvic floor function.

The length of the second stage of labour—while only available in a limited number of patients in the present study—was prolonged in most cases. Traditional management of labour limited the duration of the second stage, however, this has come under scrutiny in an effort to reduce rates of the primary caesarean section. Prolongation of the second stage of labour has been suggested as a potential method of increasing vaginal birth rates, despite being linked to sphincter injury and levator ani muscle avulsion.

Similar to previous research into more generalised pelvic floor dysfunction(3), women were slow to be referred to specialist care, with two-thirds of women waiting longer than one year for a referral. While symptoms may take some time to develop, it is likely that patient and healthcare provider education would increase awareness of these childbirth-related injuries, hopefully reducing the length of time women wait with these devastating symptoms.

CONCLUSIONS

Asymmetric pudendal neuropathy was found in a large number of women with an intact anal sphincter complex who presented with faecal incontinence. Forceps-deliveries are over-represented in this group, lending credence to the hypothesis that traction and compression of the pudendal nerve during the second stage of labour is a risk for both pudendal neuropathy and postnatal faecal incontinence. The effects of nerve injury are not limited to incontinence, and a reasonable degree of sexual dysfunction exists in this cohort. Patient and healthcare education is important to reduce the time women are left suffering from these conditions.

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30 - SURGICAL PROCEDURES FOR THE TREATMENT OF STRESS URINARY INCONTINENCE (SUI) IN THE LIGHT OF THE UPDATED FDA-WARNING AND ITS EFFECTS ON PRACTISE PATTERNS IN GERMANY BETWEEN 2010 AND 2018

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INTRODUCTION AND AIM OF THE STUDY

Although the FDA-warnings regarding vaginal mesh in both 2008 and 2011 did not primarily address suburethral alloplastic slings such as the tension free vaginal tape (TVT) [1], changes in practise patterns became evident over the last decade. It was the aim of this study to describe the nationwide numbers of alloplastic slings inserted in the years 2010, 2015 and 2018 in Germany and to relate those numbers to possible surgical alternatives to cure stress urinary incontinence (SUI) such as transvaginal suspension/suprapubic suspension, abdominal or laparoscopic retropubic suspension and bulking agents.

MATERIALS AND METHODS

This is a descriptive study utilizing data gathered from the German Federal Statistical Office (www.destatis.de) at three defined time points: 2010, 2015 and 2018. Included were the following procedures: A. Alloplastic slings (TVT): 5-593.2, .20, .2x, .30, .31 ,5-594.3, .30., .31; B. Transvaginal and suprapubic suspension: 5-593.00, .01, .02, 0x, .10, .11, .1x, 5-594.0, .1; .2; C. Abdominal retropubic or paraurethral suspension: 5-595.0, .1, .11, .1x, .2, .21, .22, .23, .24, .25, .2x, .3; D. Bulking agents: 5-596.00, .01, .02, .0x; Overall changes as well as changes in age distribution (groups of 5 year intervals) were subject to analysis.

RESULTS

A total of n=69.732 patients were included. There was a 36.5% overall decrease of surgical procedures for the treatment of SUI within the time frame analyzed. Decrease in more detail: A. Alloplastic slings (TVT) 37,3%; B. Transvaginal and suprapubic suspension: 47.6%; C. Abdominal retropubic or paraurethral suspension: 44,4%; increase of D. bulking agents: 5,9%. See Figure 1 for details. Whereas in 2010 women aged 55-60 years were the group treated mostly with a TVT (n=2.771), there was a shift towards younger women aged 50-55 years in both 2015 (n=2.459) and 2018 (n=2.093) as the group with the most sling procedures. The small increase of patients treated with bulking agents could not compensate for the dropping numbers of the TVT-procedure.

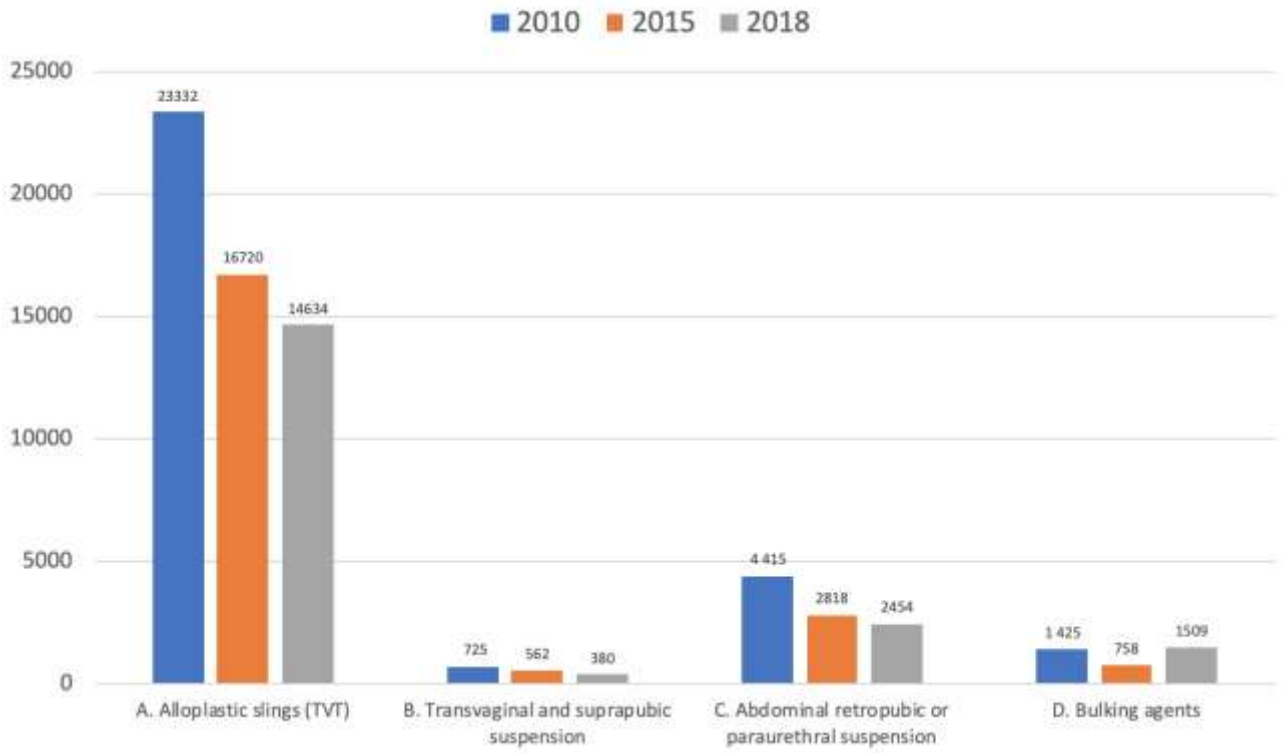
INTERPRETATION OF RESULTS

We could describe a dramatic decrease of surgical procedures regarding the treatment of SUI in Germany between 2010 and 2018. It is likely that this change of practise pattern can be justified by the updated FDA warning and its global and national effects [1]. Changes in overall prevalence data in Germany as well as non-surgical therapies such as physiotherapy and their impact need to be addressed in future research. To be complete, artificial sphincter implantation had been performed n=29 in 2010, n= 38 in 2015 and n=24 in 2018, although this procedure is clearly not a primary alterative to alloplastic slings. Nationwide numbers of intravaginal laser therapy to cure SUI are not available.

CONCLUSIONS

Decreasing numbers of surgical procedures for the treatment of SUI may be the result of both: FDA-warnings regarding alloplastic materials used in female pelvic reconstructive surgery and the fact that surgical alternatives did not compensate for these effects.

Figure 1



Comparison of all surgical option for the treatment of SUI within the years 2010, 2015 and 2018 in Germany. Notice the strong decrease in alloplastic slings. Except bulking agents, all other surgical techniques decreased as well. The small increase of bulking agents can not compensate for dropping numbers in general.

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31 - ANIMAL EXPERIMENTAL RESEARCH ASSESSING PELVIC FLOOR IMPLANTS: OUTCOME MEASURES DESCRIBING THE HOST RESPONSE

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INTRODUCTION AND AIM OF THE STUDY

Prior to the introduction of new biomaterials for pelvic floor surgery, animal studies on the host response have become a requirement to assess the safety and efficacy in preparation of clinical studies[1]. The host response towards these implants is essential for the development of new load bearing tissue, but if being uncontrolled it can cause adverse events. Unfortunately, researchers have used various animal models and report various outcome measures. This heterogeneity in study design challenges translation to clinical practice. We conducted a systematic review to give an overview of all outcome measures describing the host response in animal studies assessing vaginal mesh surgery (uncontrolled, controlled and compared to abdominal implantations). In addition, using meta-analysis we aim to visualize the direction of effect of these outcome measures (PROSPERO registration number of protocol CRD42019142850).

MATERIALS AND METHODS

A comprehensive systematic search was performed in May 2019 and consisted of controlled terms and free text terms for [1] POP, pelvic floor or vaginal reconstruction and [2] various implant terms combined with [3] an animal filter. Reference lists and reviews were checked for other relevant studies. The retrieved studies, were independently screened by two reviewers using a predefined set of selection criteria. Only original animal studies assessing vaginal mesh implantation were included. In case abdominal implantations were compared to vaginal implantations, these studies were also included for separate analyses. The host response included all reactions to the implant, both direct (*e.g.* neovascularization, total collagen, MMP-2) and indirect outcomes (*e.g.* vaginal exposures) and were classified into three groups [1] histomorphology, [2] biomechanics and [3] macroscopic morphology. Risk of bias was assessed by 2 independent reviewers using SYRCLE Risk of Bias tool [2]. Outcome measures reported ≥ 10 times in ≥ 2 references were eligible for meta-analysis. The effect of mesh surgery on macroscopic morphology was analyzed without a control group since macroscopic morphological changes only occur in implanted animals. Depending on the type of data, results were reported as event rate and mean (macroscopic morphology), or odds ratio (OR) and Hedges G (histomorphology and biomechanics), all with their 95% confidence intervals (CI).

RESULTS

The search identified 354 unique references of which 44 articles could be included in the qualitative synthesis and 30 studies were eligible for meta-analysis.

The most used animal models were rabbits (32%) and rats (30%) and the most studied type of implant was polypropylene (40%). In total, 141 different outcome measures describing the host response were defined. Of these, 89/141 (63%) were quantitative and thereby candidates for meta-analysis.

Regarding risk of bias analysis, most studies reported important methodological details poorly, resulting in a unclear risk of bias score (fig 1).

Animals with vaginal implants had significant higher neovascularization scores, MMP-2 activity and stiffness measurements compared to control animals receiving sham surgery or native tissue repair (table 1). Vaginal contractility was significantly lower in animals after mesh surgery compared to control animals. For total

collagen, smooth muscle thickness and apoptosis, no significant differences between the vaginal implanted animals and controls were observed. The overall event rate for vaginal exposures was 19.8% [16.2 ; 23.9] (fig 2). But exposures were significantly more common in the vagina then the abdominal wall (OR = 3.44 [1.61 ; 7.36]. Overall, there was 32.7% vaginal contraction [27.8 ; 37.7]. Also contraction was significantly higher in the vaginal than abdominal wall (Hedges G = 2.16 [1.66 ; 2.67]).

CONCLUSIONS

These results demonstrate that animals with vaginal implants have significant higher neovascularization scores, MMP-2 activity and stiffness and lower vaginal contractility compared to control animals. However, these results should be interpreted with caution due to the explorative nature of this systematic review and are hypothesis generating. We observed a huge heterogeneity in outcome measures and meta-analysis could only be performed for 13/141 outcomes due to the qualitative and infrequent reporting. We would like to address the urge for a set of quantitative outcome measures in animal studies, which would ideally predict the host response in women and possible development of local adverse events. By this, interpretation, aggregation and translation of results would be possible, and this would make animal experimental research more effective.

Figure 1: Risk of Bias assessment

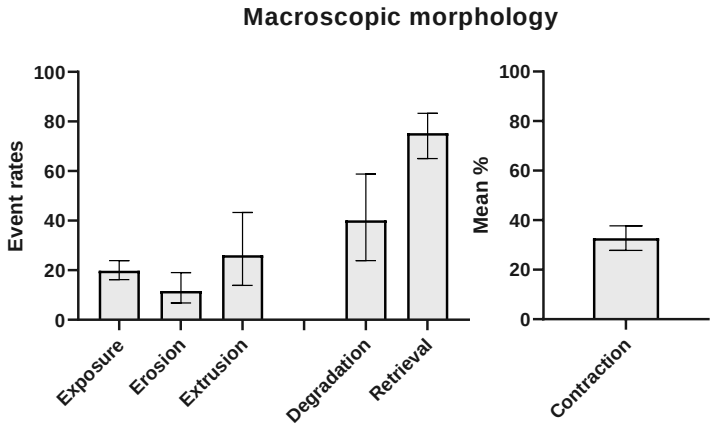

Figure 2: event rates and mean % of macroscopic outcome measures, with 95% confidence intervals (CI)

Outcome	Hedges G	CI	Heterogeneity
Neovascularization	1.22	0.81 ; 1.63*****	18%
Collagen	0.17	-0,62 ; 0,95	68%
Smooth muscle	0.32	-0.30 ; 0.94	58%
Apoptosis	0.26	-0.35 ; 0.88	48%
MMP-2	2.24	1.18 ; 3.31*****	72%
Stiffness	0.52	0.05 ; 1.00*****	41%
Contractility	-0.45	-0.87 ; -0.03*****	26%

Table 1: Hedges G with 95% confidence intervals (CI) and heterogeneity of histomorphologic and biomechanical outcome measures. * significant difference

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32 - URODYNAMIC PREDICTORS OF DE NOVO OVERACTIVE BLADDER AFTER SINGLE-INCISION SLING.

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INTRODUCTION AND AIM OF THE STUDY

Stress urinary incontinence (SUI) represents a major health issue. Surgical treatment is indicated when conservative management fails. Suburethral slings are considered the first surgical option because of the high efficacy rates. In particular, single-incision slings (SISs) showed similar effectiveness, less pain and shorter recovery time compared to standard tapes with a negligible learning curve[1]. Moreover, SISs seem to maintain effectiveness irrespective of age, BMI and obstetrical history[2,3]. Moreover, they may have a lower risk of complications, like visceral injury, major bleeding, infection, and neurological pain. However, functional complications can occur after sling implantation. In particular, according to a recent meta-analysis, the risk of de novo overactive bladder (OAB) after sling implantation is approximately 9%, without evident differences with respect to the different types of tapes. The aim of the study was to identify urodynamic predictors for de novo overactive bladder (OAB) after single-incision sling implantation in a pure stress urinary incontinence population.

MATERIALS AND METHODS

This retrospective study analysed women with pure, urodynamically proven stress urinary incontinence. Exclusion criteria were recurrent incontinence, overactive bladder syndrome / detrusor overactivity, preoperative postvoid residual >100 ml, reduced urethral mobility (<10° at the Q-tip test), concomitant anterior prolapse > I stage and previous history of radical pelvic surgery. Pelvic examination was performed according to POP-Q system. Urodynamic evaluation comprehended uroflowmetry, cystomanometry and Q-tip test. SUI severity was self-assessed with the International Consultation on Incontinence Questionnaire-Short Form questionnaire (ICIQ-SF). Q-tip test was performed to evaluate urethral mobility. Bladder Outlet Obstruction Index (BOOI), calculated as detrusor pressure at maximum flow - 2 x maximum flow rate, was evaluated as marker of urethral resistance

RESULTS

192 patients were analyzed. 21 patients with de novo OAB were considered as group A while 171 control patients as group B. Univariate analysis demonstrated that patients with de novo OAB have the first desire to void at lower bladder volume (124 ml vs 160 ml, p=0.0052), less maximum cystometric capacity (357 ml vs 406 ml, p=0.0061), lower maximum flow (17 ml/s vs 23 ml/s, p=0.0006) and higher bladder outlet obstruction index (BOOI; -11 vs -23, p=0.0022) compared to controls. According to multivariate analysis, maximum cystometric capacity (PE=0.008, p=0.04) and BOOI (PE=-0.029, p=0.01) resulted as independent urodynamic predictors of de novo OAB. The final model resulted in a good predictive accuracy (AUC=0.81).

INTERPRETATION OF RESULTS

Up-to-date there are few studies evaluating preoperative urodynamic predictors of postoperative OAB, and they focus on standard tapes. We found that women who developed de novo OAB had lower bladder volume both at first desire to void and at maximum cystometric capacity, with the latter representing an independent risk factor at multivariate analysis. We can speculate that a first desire to void at lower bladder volume can represent a sign of higher bladder sensitivity, and this might be related to a subclinical alteration of urothelium. This may ease activation of detrusor through stimulation of sensory receptors thus promoting urgency. Another explanation could be that the anticipation in the first desire to void is related to the smaller bladder capacity we found in these patients. In our series absolute values of BOOI in both groups were found to be inferior to both obstructed or equivocal classes. However, since bladder outlet obstruction represents a well known cause of OAB, it can be speculated that even a subliminal increase in BOOI value might represent a risk factor for OAB.

CONCLUSIONS

Our study identified maximum cystometric capacity and BOOI as independent predictors of de novo overactive bladder after single-incision sling implantation. Therefore, preoperative urodynamics may play a key role in improving preoperative counselling and tailoring surgical treatment.

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33 - FEMALE SEXUAL DYSFUNCTION AND HYPERTENSION IN POSTMENOPAUSAL WOMEN: A PILOT STUDY EXPLORING THE CONTRIBUTION OF CLITORIS ARTERY FLOW AND VAGINAL ATROPHY.

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INTRODUCTION AND AIM OF THE STUDY

Female sexual dysfunction (FSD) is the result ofmultiple factors throughout their adult life of women, although the prevalence is higher during the postmenopausal period. Up to 40% of the reproductive and 85% of the postmenopausal women suffer from sexual disorders worldwide. Over the last decade, significant progress has been noted at the definition and classification of FSD. The main causes of female sexual dysfunction can be divided into low desire, diminished arousal, inability and difficulty achieving orgasm, and pain during intercourse. Normal sexual function in women is based on a harmony coordination of emotional and physical wellbeing. This complex interaction may be altered by both structural and functional deterioration rendering the diagnosis and treatment of FSD pretty tricky. Nevertheless, it is well established that FSD detrimentally affects quality of life, and thus clinicians need to be aware of evaluating this condition. Despite the higher prevalence of FSD as compared to males, data remains scarce. Sexual dysfunction in hypertensive women is aneglected issue with some data suggesting a prevalence of 42.1%. Although few reviews exist, a definitive relationship between hypertension and FSD has not been clearly established. Studies on the role of the clitoris in female sexuality have shown that sexual function can be impaired whendiminished blood flow to the clitoris is found. Herein, Doppler ultrasonography of the clitoral artery may have a place in diagnosing vascular insufficiency causing vasculogenic FSD. At the time being, no study has investigated the correlation among FSD, clitoris artery flow, vaginal atrophy and hypertension. This is a prospective pilot cross-sectional study aiming to investigate potential association between FSD and hypertension in postmenopausal women, by employing clitoris artery doppler indices and cytology of the vaginal epithelium.

MATERIALS AND METHODS

Eligible participants were sexually active postmenopausal women referred to the outpatient clinic of a Teritary Academic Centre. Exclusion criteria were: multiple sclerosis, previous spiral cord injury, any type of active malignant disease, and not signed informed consent. At presentation, after signing the consent form, participants underwent a clinical, laboratory, and ultrasound examination, and fulfilled validated questionnaires. In addition, demographics, comorbidities, and any medical treatment was recorded. A meticulous clinical examination was performed, including blood pressure measurements, vital signs, anthropometric measurements, specumlum vaginal examination, pelvic organ prolapse organ measurement (POP-Q score), as well as vaginal and perineal sensibility. Moreover, the following questionnaires were used: FSFI, B.D.I.-F, BECK DEPRESION, Sexual Quality of Life, ICIQ, ICIQ-FLUTS, and ICIQ-VS. Blood samples were cannulated from a peripheral vein. We measured complete blood cell, biochemical, and hormonal (TSH, Testosterone, SHBG, E2, and DHEA-S) count. Also, all participants underwent cytologic test of vaginal epithelium for determination of level of vaginal atrophy. Furthermore, the clitoris atherosclerosis was evaluated with ultrasound doppler parameters, by measuring the pulsatility index (PI) and resistance index (RI) of the clitoris artery.Statistics were performed using Microsoft EXCEL and JASP {JASP Team (2019). JASP (Version 0.11.1) [Computer software], Amsterdam, Netherlands}.

RESULTS

Overall, 20 Caucasian women were eligible and participated in our study. The mean age was 62.7±7.2 years, mean duration of menopause was 12.3±7.3 years, the mean BMI was30.7±5.5 kg/m2,mean blood pressure was 137±22/85±17 mmHg, and mean FSFI scorewas20.4±7.6;11 (55%) of them were hypertensive. Compared to normotensive participants, those with hypertension tended to be older (65.2±6 vs 61.9±8.5 years), to have higher BMI (32.9±6.1 vs 29.6±4.4 kg/m2), and be more years in menopause (15.1±6.8 vs 11.1±7.8 years). In addition, hypertensive women had higher blood pressure (147±24/91±19 vs 125±11/77±11mmHg), had more commonly diabetes melitus, and dyslipidaemia as compare to normotensive participants. Regarding the FSD, hypertensive individuals tended to have worsen sexual life than normotensive (mean FSFI score 19.8±6.4 vs 21.1±9.2).Of great interest, hypertensive women had more impaired clitoris artery blood flow and higher level of vaginal atrophy. More specifically, high level of vaginal atrophy was identified in approximately 55% and 33% of hypertensive and normotensive participant, respectively. Moreover, hypertensive subgroup measured with higher PI and RI (3.70±0.8 vs2.98±0.86 and1.03±0.04 vs0.98±0.15), suggesting higher level of clitoris artery atherosclerosis.

INTERPRETATION OF RESULTS

Herein, Doppler ultrasonography of the clitoral artery may have a place in diagnosing vascular insufficiency causing vasculogenic FSD. This might be a novel pathogenetic factor potential contributing to the increased prevalence of FSD in postmenopausal hypertensive women.

CONCLUSIONS

Collectively, we found hypertensive postmenopausal women had higher level of FSD, in parallel with a worsen level of vaginal atrophy and clitoris artery atherosclerosis. Future randomized controlled trials are needed to evaluate this correlation.

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34 - WHAT DO YOU WANT? WOMEN'S PREFERENCES AROUND RECURRENT URINARY TRACT INFECTIONS

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INTRODUCTION AND AIM OF THE STUDY

One in three women will suffer from a urinary tract infection (UTI) by 24 years (1). UTI is generally managed in primary care and accounts for a significant proportion of antibiotics prescribed by GPs (1). UTI can present with dysuria, frequency, haematuria, incontinence or smelly or cloudy urine.

Recurrent UTI (rUTI) defined as ≥2 infections during 6 months (or ≥3 during 12 months), has a significant impact on quality of life (QoL) (2). There are various treatments for rUTI. The first line treatment for UTI is a course of antibiotics. These can also be given as low dose prophylaxis or following an aggravating event (such as sexual intercourse). There is some evidence to support the use of cranberry containing products in preventing UTI as well as vaginal oestrogens in post-menopausal women. Urinary anti-septics such as methenamine Hippurate (Hiprex) taken daily can reduce the frequency of rUTI. More invasive treatments include the sub-lingual vaccine, bladder instillations or urethral dilatation, all of which are of dubious efficacy.

This study aims to assess the acceptability of UTI symptoms and treatments in a population of women suffering, or undergoing treatment for rUTI.

MATERIALS AND METHODS

A novel 4 point questionnaire was derived and piloted amongst staff and patients. It was then given to all patients presenting with rUTI or already treated for rUTI in a tertiary Urogynaecology service between May and December 2019 together with a King's Health Questionnaire (KHQ). Demographic information was collected on age, occupation, menopausal status and how many UTIs had been experienced in the last 12 months.
The four parameters were:

1. 'How much do UTIs bother you?', answered on a 10 point Likert scale
2. 'What do you think would be a good result from treatment?' answered on a 4 point scale
3. A series of questions about acceptability of symptoms
4. A series of questions about acceptability of treatments

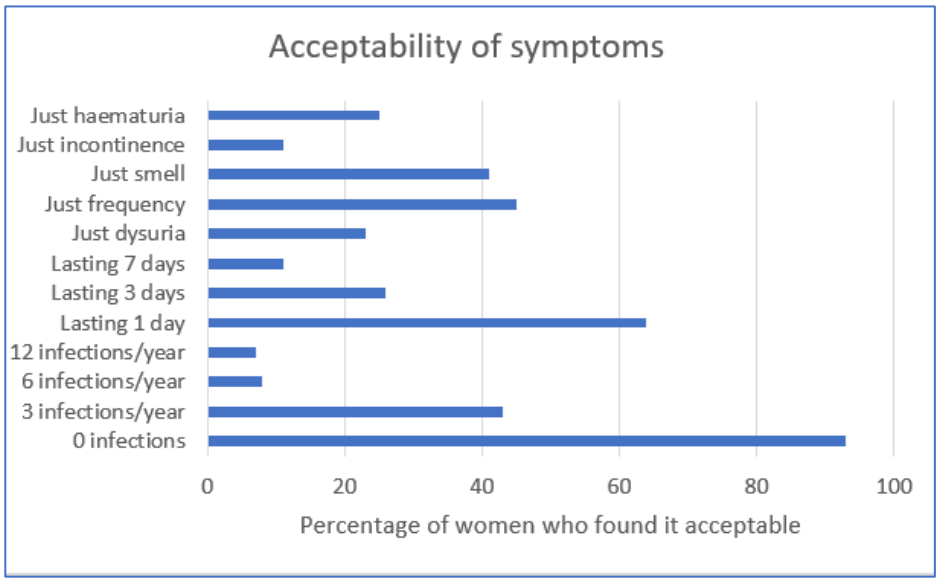
Multivariate regression was used to identify any relationship between the answers and KHQ score.

RESULTS

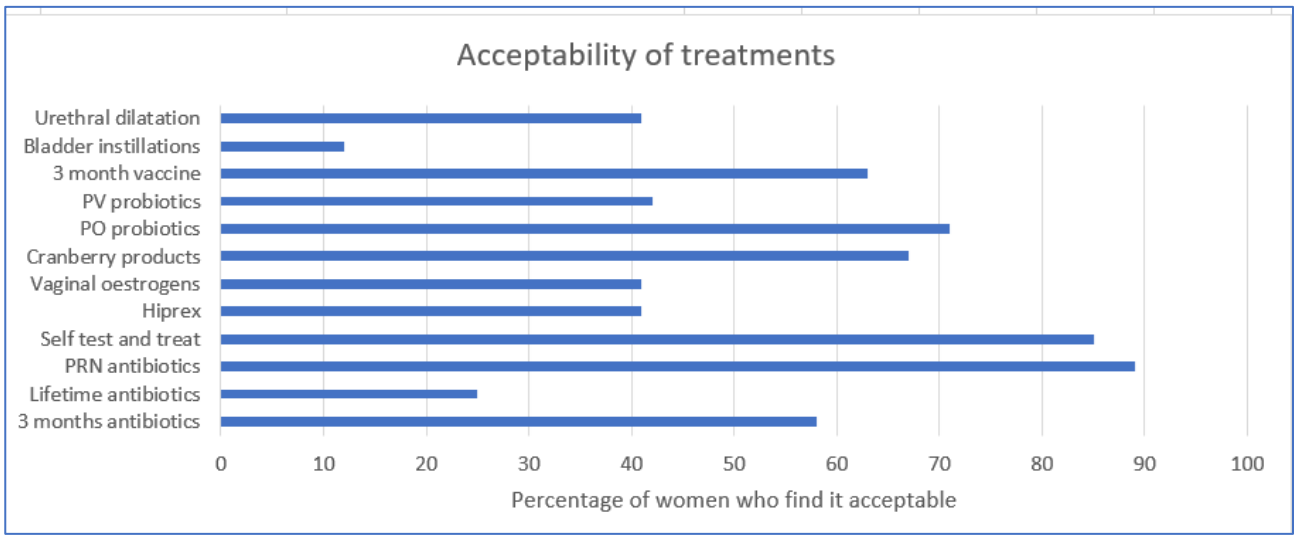
105 questionnaires were completed. A bi-modal distribution of age was noted (range 16-82).

The mean infection frequency was 5.7 over 12 months. The mean bother score was 8/10. 43% would find 3 UTI/year acceptable. Regarding symptoms, urinary frequency was the most acceptable symptom (45%) with incontinence the least (11%).

55% of women would consider 'an improvement in symptoms so they no longer affect your quality of life' as acceptable and only 25% of women expect a complete cure.



'As required' antibiotics were the most acceptable treatment (89%) with 85% women keen to manage UTIs on a self-directed 'test and treat' basis. Bladder instillations were the least accepted (11%). See table for details.



Acceptability of symptoms and treatment are independent of KHQ score, bother and age, with the exception of vaginal oestrogens. 52% women over 50 would accept vaginal oestrogens compared to 19% under 50 ($p<0.05$).

INTERPRETATION OF RESULTS

Recurrent UTI are a significant cause of bother. The symptoms that are least tolerated are incontinence and dysuria whilst just urinary frequency is more accepted. A majority of women would like an improvement in symptoms so quality of life is not affected and only a quarter expect a complete cure which implies that women have a realistic expectation of cure.

The different treatments are variably acceptable. The least accepted treatments were bladder instillations and lifetime antibiotics. Self-directed treatments such as self-test and treat are more desirable to patients. Of note urethral dilatation would be accepted by 41% of women which is the same proportion as who would accept vaginal oestrogens.

CONCLUSIONS

RUTI cause significant bother to women of all ages, therefore treatment preferences are important.
Patients prefer less invasive, self-directed treatments. Whilst antibiotics are acceptable in the short-term, they are not when given continuously or long term.
We should encourage patient involvement and discussion around what is most appropriate for that individual woman.

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35 - A NEW LOOK AT THE CONTINENCE ZONE IN WOMEN BASED ON THE URETHRAL PRESSURES PROFILOMETRY

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INTRODUCTION AND AIM OF THE STUDY

The continence zone is defined as the urethral area where the highest intraurethral pressures are observed. In the literature, the location of this zone is provided quite broadly, namely between 40 and 70 percent of the urethral length. The present study was undertaken to better characterize the continence zone in different age groups of Caucasian women, both in continent and stress-incontinent subjects.

MATERIALS AND METHODS

This is a part of a thorough retrospective study sampling the Polish adult female population, labelled 'PLUS' (Polish Large-scale Urodynamic Study). Initially, >13000 urodynamic records obtained after year 2000 from 4 busy urodynamic centers working on identical equipment were united into an electronic database and reviewed for their technical correctness. These 4 centers receive patients for consultation from all parts of the country. The indication for urodynamic testing was any type of lower urinary tract symptom or complaint. Herein, we report results based on a total of 1992 records of static urethral pressure profiles (SUPPs) that were carefully verified to be technically correct. Stress incontinence (SUI) was defined as a negative value of P clo in all cough episodes during urethral pressure profilometry at stress.

RESULTS

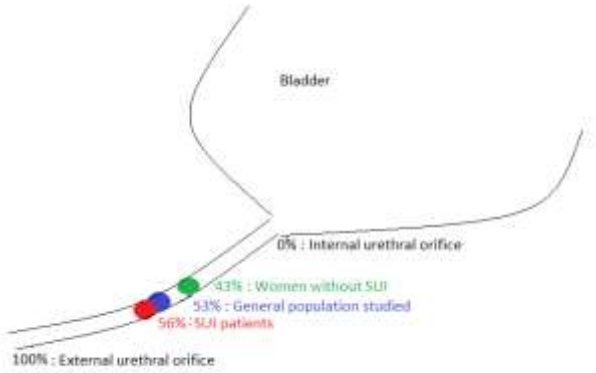

Figure 1. Location of the continence zone in the urethra

Overall, in this population sample, the continence zone was located at 53 percent of the urethral length. Importantly, this parameter did not change with age. There were, however, substantial differences between the subgroups of women with and without SUI. In patients with SUI, the continence zone was at found at 56 percent of the urethral length, quite similarly to the general population. In contrast, in patients without SUI, the continence zone was detected much closer to the internal urethral orifice, namely at 43 percent (Fig. 1).

INTERPRETATION OF RESULTS

This study was successful in narrowing the broad range of the urethral length given for the continence zone. Women without SUI are likely to be urodynamically representative for healthy subjects. If so, the continence zone is located closer to the bladder neck and internal urethral orifice than thought before.

CONCLUSION

We suggest that the continence zone may be narrower than previously reported [1,2] and located closer to the bladder neck in healthy women population.

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36 - THE IMPACT OF AGE AND THE MENOPAUSE ON DIURESIS RATES

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INTRODUCTION AND AIM OF THE STUDY

Aging is associated with changes in the physiology and function of all vital organs including the genitourinary system. The cause of aging remains unclear. The prevalence of lower urinary tract symptoms increases with age and has been attributed to the loss of endogenous sex steroids that occurs at the time of the menopause. Diuresis is the increased urination and the physiological processes that produce such an increase. Diuresis can be a side effect of other medical conditions such as heart failure or kidney disease (1). Hormonal changes that occur during the climacteric and the throughout the regular circadian cycle can further impact on fluid regulation and lower urinary tract symptoms (LUTS) (2).

The aim of this study is to determine the impact of aging and the menopause on lower urinary tract symptoms and rate of diuresis.

MATERIALS AND METHODS

All female patients attending an outpatient urogynaecology clinic were asked to complete a 3-day bladder diary. Data were collected on frequency of micturition, voided volume, diuresis rate and functional capacity. Descriptive data and independent sample *t*-test were performed using SPSS version 25

RESULTS

1402 bladder diaries were collected, 5 were excluded due to missing data or extreme values. Mean age of patients was 57 years (range 19 – 90). Mean length of voiding diary 72 hrs. Mean functional capacity for all age categories ranged from 404 mls to 508 mls.

Table 1 Day/night mean and ratio for urinary frequency, diuresis rate and voided volume according to age

Age (years)	Mean Frequency		Day/Night Ratio	Mean Diuresis Rate (ml/hr)		Day/Night Ratio	Mean Voided volume (ml)	
	Day	Night		Day	Night		Day	Night
21 – 30	7.6	0.8	9.5 : 1	1.35	0.74	1.8 : 1	1179.5	412.5
31 – 40	8.3	1.2	6.9 : 1	1.51	0.96	1.6 : 1	1379.4	506.4
41 – 50	8.3	0.9	9.2 : 1	1.53	0.33	4.5 : 1	1427.5	483.6
51 – 60	8.0	1.2	6.7 : 1	1.17	1.16	1 : 1	1341.3	595.3
61 – 70	7.7	1.5	5.1 : 1	1.31	1.21	1.1 : 1	1205.6	627.9
71 – 80	7.2	1.6	4.5 : 1	1.13	1.21	0.9 : 1	1057.5	620.9
81 – 90	6.5	1.5	4.3 : 1	0.91	0.98	0.9 : 1	835.9	510.9

Table 2 Proportions of lower urinary tract symptoms according to age

Age (years)	N =	24-hr Polyuria (≥2500ml)	Functional Capacity <300ml	Frequency ≥8	Nocturia ≥1 Void	Nocturia ≥2 Voids	Nocturnal Polyuria
21 – 30	65	10.8%	26.2%	53.8%	29.2%	10.5%	18.5%
31 – 40	140	17.1%	17.9%	64.3%	45.7%	20.0%	24.3%
41 – 50	258	20.2%	12.4%	63.2%	37.6%	15.1%	16.3%
51 – 60	285	19.3%	13.3%	62.1%	49.5%	20.0%	25.6%
61 – 70	316	16.8%	14.9%	64.6%	59.2%	30.4%	37.3%
71 – 80	270	10.0%	20.0%	55.2%	65.9%	33.3%	42.2%
81 – 90	54	0%	25.9%	40.7%	61.1%	25.9%	32.1%

Table 3 Day/night variance in voided volume, diuresis rate and frequency for women < or ≥56 years

	Age <56 years		Age ≥56 years		p-value (t-test)
	Mean	SD	Mean	SD	
Day Volume Voided (ml)	1353	703	1161	526	<0.001
Night Volume Voided (ml)	505	293	611	344	<0.001
Day Diuresis Rate (ml/hr)	1.47	0.74	1.26	0.55	<0.001
Night Diuresis Rate (ml/hr)	0.98	0.55	1.19	0.66	<0.001
Day Frequency	8.2	3.0	7.5	2.2	<0.001
Night Frequency	1.1	1.1	1.5	1.3	<0.001

INTERPRETATION OF RESULTS

Nocturnal diuresis rate significantly increases following the age of 51 years, which is the average age of the menopausal. In the age category 41 to 50 years, the perimenopausal years, the nocturnal diuresis rate was noted to be slowest at a rate of 0.33 ml/hr. There was an overall increase in the incidence of nocturia, nocturnal polyuria and reduced functional bladder capacity with advancing age. The majority of the cohort was presumed to be post-menopausal after the age of 56. Women above the 56 years of age had a significantly increased diuresis rate compared to women less than 56 years (0.98 vs 1.26; p <0.001).

CONCLUSIONS

This study supports previous epidemiological work whereby advancing age is associated with lower urinary tract symptoms and an increase in nocturia with increasing age (3) Rate of nocturnal diuresis significantly increased after the age of 56, when it is presumed that the majority of the cohort are post-menopausal. This was associated with an increase in the incidence of nocturia and nocturnal polyuria. The shift in hormone production during the climacteric may have contributed to this effect; further work is required to investigate this.

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1_ep - URETERIC STENTING WITH A FULLY COATED POLYMERIC STENT – A NEW THERAPY OPTION FOR URETERAL INJURIES DURING CESAREAN SECTION

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INTRODUCTION AND AIM OF THE STUDY

Lower urinary tract injury at the time of cesarean section is an uncommon complication. The most common injuries are bladder injuries and are usually easy to treat with sutures without complications. Ureteral injury is a rare complication of cesarean section. In contrast, ureteral injuries are more difficult to treat. It is attributable most often to ureteral transection or ligation associated with uterine incision extensions in the lower uterine segment or the vagina, and to attempts to achieve hemostasis **(A)**. Main complications are ureteral stricture or occlusion with consecutive urinary retention kidney, ureter-cervical vaginal fistula or ureter-vaginal fistula. Up to now, the ureter was, if possible, extremely rarely treated by means of an early surgical revision, but mostly by a DJ or nephrostomy and in intervals of 2-3 months by reconstruction by neo-implantation of the ureter. Since 2012, we investigated in our clinic a new technique for ureter reconstruction- use of the Allium Ureteric Stent (URS) a metal self-expanding stent which is made of nitinol and covered with a biocompatible, biostable Elast-Eon polymer to make it a nonpermeable tube. These properties contribute for a healing process of the ureter lesion without any subsequent treatment. The stent is inserted minimally invasively using a cystoscope or ureterorenoscope under radiological control using the Seldinger technique.

MATERIALS AND METHODS

12 patients with ureter injury were treated from 09/2014 - 04/2020 with fully sheathed stents (ureter stent 120x10mm or 200x9mm, Allium) **(B)**. Insertion was performed retrograde under radiological control. In 4 cases a transuretral suture dissection of the occluded ureter was performed. An additional ureterolysis of a deep vaginal suture was performed in 3 cases. In order to restore ureteral continuity by stent, a rendevous maneuver took place in 3 cases. In 5 cases the severed ureter could be found by means of ureterorenoscopes. After insertion of a terumo wire the sealing stent could be inserted in seldinger technique. The position, continuity and sealing of the stent in the ureter were documented by radiological contrast imaging. In 7 cases an additional typical ureter stent were inserted in the sealing stent - stent-in-stent technique - was used to guarantee good urine drainage. Mean surgery time was 46 min (21-96 min). The average inpatient stay was 2 days. The stent was removed after 4 months (3-6 months).

RESULTS

Stent removal was carried out without any problems using URS or Cystoscope and grasping forceps. No leakages, discontinuities or scarred strictures were detected by retrograde imaging and URS. Follow-up examinations took place after 1,3 and 6 months. Ultrasound was used to check the kidney and stent position. In addition, wound healing could be checked by elastography and power-mode sonography. Infection or incrustation of the stent was not detected during this period. Patient satisfaction is very high due to the good stent tolerability.

2_ep - FEASIBILITY AND PATIENT ACCEPTABILITY OF NON-INVASIVE INTRAPARTUM PUDENDAL NERVE MONITORING

Bobby O'Leary *(1)* ***- Conor O'Brien*** *(2)* ***- Donal Brennan*** *(1)* ***- Declan Keane*** *(2)*

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INTRODUCTION AND AIM OF THE STUDY

The pudendal nerve is the main nerve of the perineum providing motor supply to the external anal sphincter, urethral sphincter, and perineal muscles, as well as sensation from the external genitalia and perineum(1) Traction injury during the second stage of labour, and compression of the nerve at the level of the ischial spines have been suggested as potential mechanisms of injury.(2) Pudendal nerve injury can cause urinary and faecal incontinence, decreased sensation on sexual intercourse, and generalised perineal pain.(2)

The current recommended standard examination of the pudendal nerve is an invasive assessment of the full length of the nerve with quantitative needle EMG of the external anal sphincter, and Clitoral Anal Sacral Reflex testing(1), These tests are not easily performed in the delivery room environment.The aim of this study was to assess the feasability and acceptability of a non-invasive pudendal nerve monitor in the second stage of labour.

MATERIALS AND METHODS

This was a prospective cohort study. Nulliparous women were recruited prior to the onset of labour over a four-month period (August 2019 – December 2019). Women were eligible for inclusion in the study if they were nulliparous, either in spontaneous or induced labour with a live, singleton fetus, cephalic presentation, and between 37 and 42 weeks gestation. Pudendal nerve monitoring was commenced once a diagnosis of full cervical dilation had been made by the attending midwife or doctor. Surface electrodes (Natus Neurology, Middleton, WI, USA) were placed over the radial creases of the external anal sphincter at the mucocutaneous junction, 1cm from the anal orifice on the right and left sides, sequentially. A ground plate was positioned on the patient's thigh. Electrodes were connected to a Bluetooth transmitter (FlexVolt, Lebanon, NH, USA). Signals from this transmitter were recorded on a Samsung A6 tablet (Samsung Corporation, Seoul, South Korea) using a dedicated android application (app). The amplitude of the surface EMG was recorded in microvolts (μV), and a sampling rate of 1000Hz was used. EMG data were imported into R4.0.2 (R Foundation for Statistical Computing, Vienna, Austria). Patient demographics were extracted from the Maternal & Newborn Clinical Management System (MN-CMS) (Cerner, North Kansas City, MO, United States). The hospital REC approved the study.

RESULTS

A total of 76 nulliparous women were recruited to participate in the study, of which 20 women with a mean age of 33.1 years had pudendal nerve monitoring. All women (20/20) had epidural anaesthesia, and all delivered liveborn infants. The mean (range) gestational age at delivery was 40+3 (37+3 – 42+1) weeks. The onset of labour was spontaneous in 20% (4/20) of cases and induced in 80% (16/20). The mean (±SD; range) length of the second stage of labour was 87 (±42; 20 – 171) mins. There were no demographic differences between the women recruited who had a pudendal nerve recording performed, compared with those who did not have a pudendal nerve recording. Of the 76 women who were recruited for the study, 27.6% (21/76) delivered by CS prior to full dilatation, while the remainder occurred at night or had a rapid second stage of labour (<15 mins) such that a recording was not practicable.

Pudendal nerve recording were possible in the second stage of labour in all cases. No women withdrew during recording because of discomfort or inconvenience. EMG signals were obtained from all women and an example is shown in Figure 1 as a 60 second tracing, with 5-second subdivisions at 10-15 seconds and 35-40 seconds to aid data visualisation. A similar pattern was seen in each recording; a stable baseline with multiple, high-frequency spikes in electrical activity. This activity was felt to represent the activity of the external anal sphincter. The amplitude of the EMG signal was similar between patients, with a range of -520μA – 570μA seen across the study cohort.

INTERPRETATION OF RESULTS

This initial study has shown that monitoring of the pudendal nerve in the second stage of labour is both possible, and acceptable to women and healthcare providers. The delivery suite represents a 'hostile' environment for surface EMG monitoring, both from electrical interference, and from the very nature of labour itself. Despite the presence of amniotic fluid, and maternal pushing, we were able to record a signal in all cases where the monitoring system was applied. Early identification of pudendal nerve damage may allow an opportunity to change some aspect of care in labour—such as positioning or instrument choice—in an effort to return the pudendal nerve signal to a 'normal' morphology. Similarly, it may identify women at risk of pudendal neuropathy in labour, and thus allow earlier intervention after birth, rather than waiting for women to present to the gynaecological services, which can take years.(3)

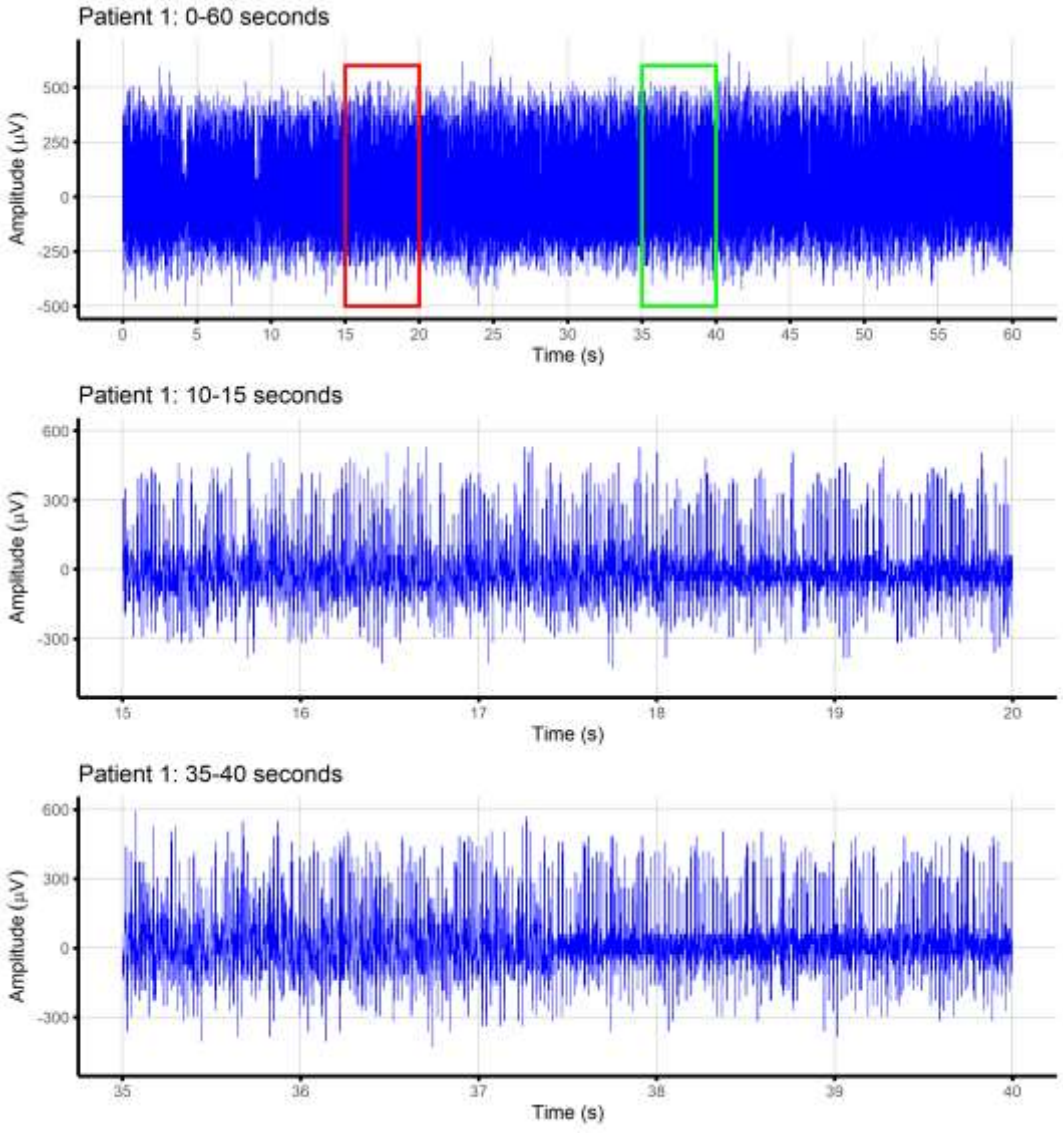

Figure 4: EMG tracing in Patient #1

CONCLUSIONS

This study demonstrates the feasibility and acceptability of non-invasive pudendal nerve monitoring in the second stage of labour in what constitutes a 'hostile environment'. Further research examining morphological changes in the pudendal nerve EMG is required, but will likely require significant work with pre-amplification and post-processing of the raw EMG signal presented here.

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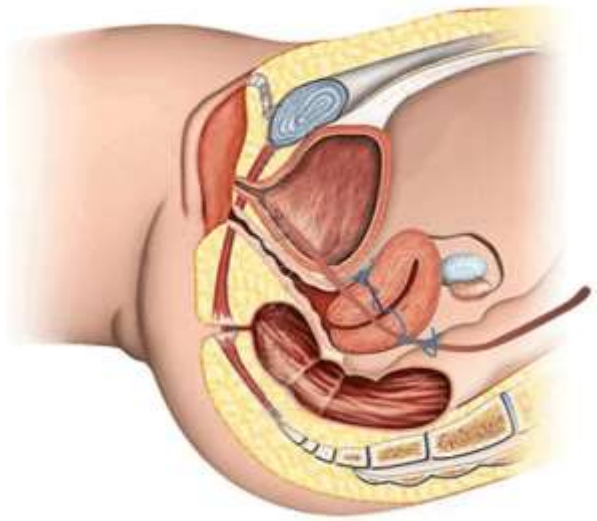
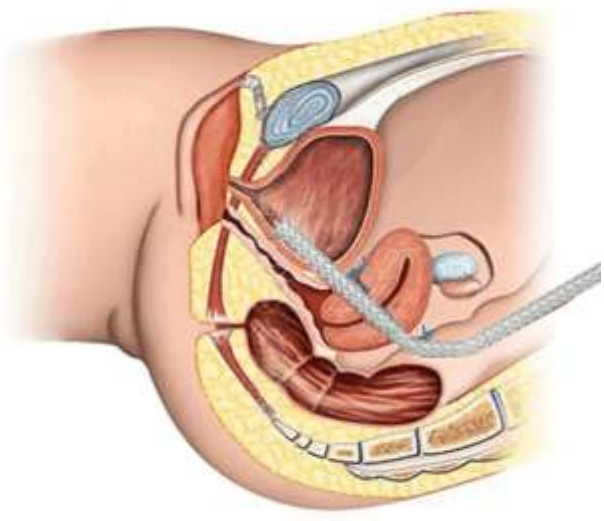
Norton PA, MacDonald LD, Sedgwick PM, Stanton SL. Distress and delay associated with urinary incontinence, frequency, and urgency in women. BMJ. 1988 Nov 5;297(6657):1187–9.

INTERPRETATION OF RESULTS

Early first-line treatment with fully coated polymeric stent is a safe, minimally invasive therapy option for ureteral lesions and the only therapy option to restore the continuity of the ureter. Follow-up interventions could be avoided.

CONCLUSIONS

Using a fully coated polymeric stent is a good option for treating a damaged ureter. Due to the stent properties wound healing was significantly improved and complete healing was achieved without strictures and subsequent interventions. Long-term studies has to be done.

	
A	**B**

3_ep - AGE-RELATED CHANGES IN FEMALE URETHRAL PROFILE PARAMETERS.

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INTRODUCTION AND AIM OF THE STUDY

Age is a well-known important risk factor for urinary incontinence in women. The urethral function worsens substantially in older subjects. However, not all urodynamic parameters change with age. The aim of the present study was to investigate urethral profilometry parameters in terms of age-related changes. Such an analysis would allow for a better characterization of the mechanisms of urethral aging leading to stress urinary incontinence (SUI).

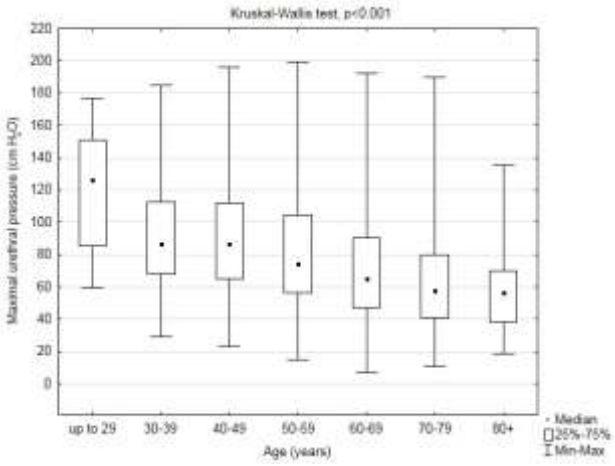
MATERIALS AND METHODS

In this retrospective study, a total of 1992 good-quality urethral profilometry records was explored. Specifically, data from the PLUS (Polish Large-scale Urodynamic Study) electronic database were reviewed. These data were collected after te year 2000 and they are considered likely to be representative for the nation. Urethral parameters derived from the urodynamics were studied in consecutive decades of patients' lives. For this purpose, the following 7 age groups were distinguished: up to 29 years of age (N=35), 30-39 years (N=113), 40-49 years (N=356), 50-59 years (N=706), 60-69 years (N=497), 70-79 years (N=252), and 80 years and over (N=33).

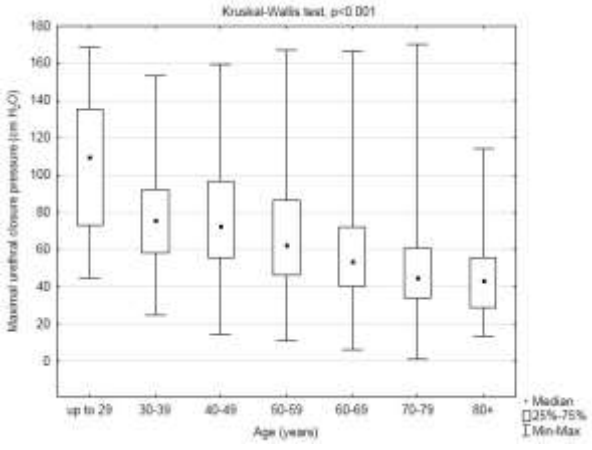
RESULTS

Urethral parameters not changing with women's age
Total urethral length
Functional urethral length,
Functional to total urethral length ratio,
Maximal urethral pressures (continence zone) location

Urethral parameters changing with women's age	**Significant Change**
Maximal urethral pressure (P ura max)	decreasing; p<0,005
Intravesical pressure (P ves rest)	decreasing; p<0,005
Maximal urethral closure pressure (P clo max)	decreasing; p<0,005



INTERPRETATION OF RESULTS



The correct function of the female urethra in terms of urinary continence is based on maintaining the adequate relationship between intraabdominal and intraurethral pressure. With age, the functional parameters deteriorate - the pressures inside the urethra and, to a lesser extent, the intravesical pressure. The anatomical parameters, such as: total length of the urethra, functional length of the urethra, functional to total urethral length ratio, and continence zone location are not influenced by age.

Quantitatively, the most significant changes in the urethral parameters under study were observed in the fourth decade of the woman's life. This the period of premenopause when the clinically important ovarian insufficiency emerges. This finding is quite surprising as most older incontinent women declare greatest deterioration in their clinical symptoms in the sixth decade of their lives, i.e. well after the menopause.

CONCLUSIONS

Statistically significant decreases in maximal urethral pressure and maximal urethral closure pressure accompanied by the lack of change in the location of the maximal urethral pressures (continence zone) makes one think that the age-related impairment of the function of the pelvic floor (or external urethral mechanism of compression) is responsible. On the top of that, the impact of hormonal deficiencies related to the fourth decade of the woman's life seem underrated.

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4_ep - DIVERTICULUM REMOVED - SATIFSFACTION IMPROVED!

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INTRODUCTION AND AIM OF THE STUDY

The incidence of urethral diverticulum in the female population ranges between 1.8 - 6%.
Symptoms are protean and challenging. It is known that patients with urethral diverticulum have a dyspareunia rate of 12-60%. The treatment consists in its complete vaginal resection and urethral end-to-end adaptation. To date there are no studies on the postoperative outcome in terms of sexual function.
Aim of the study was evaluation of sexual function and urodynamic changes before and after resection of urethral diverticulum.

MATERIALS AND METHODS

In this trial we evaluated 40 female patients who presented with symptomatic urethral diverticulum and underwent surgery between 2008-2018. Follow-up was 12 months. Sexual function was determined by the female sexual function index (FSFI) before and twelve months after surgery. All subjects had a pre- and postoperative multichannel urodynamic assessment. For statistical analysis a two-tailed paired t-test was conducted
Primary endpoint was sexual function as determined by the total score of Female Sexual Function Index. Secondary endpoints were demographic data and multichannel urodynamic measurements

RESULTS

The Female Sexual Function Index results showed an improvement for the domains satisfaction (P<0.0001), pain (P<0.0001), arousal (P = 0.0227) and lubrication (P = 0.0144). No significant difference was found for desire and orgasm. Maximum urethral closure pressure deteriorated from 39 to 36 cmH2O (P<0.0008) and residual urine increased from 10ml to 20ml after surgery (P=0.0019). No statistical significance was found for bladder capacity and free urinary flow.

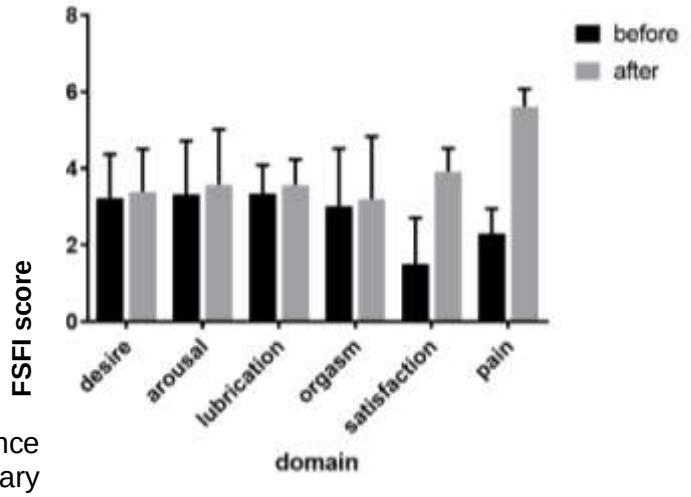

Figure 1 shows the statistical results of the several domains of sexual function described by the FSFI as means

Table 2 Comparative statistics (two-tailed *t*-test) before and after intervention *P* values

Domain	Preoperative score (median, 95%CI)	Postoperative score (median, 95% CI)	*P* values
MUCP (cmH2O)	39cmH20 (38.28-48.27)	36cmH20 (33.41-41.94)	0.008
Bladder Capacity (ml)	431.0ml (390.1-458.6)	421.5ml (390.4-456.2)	0.7649
Free flow (ml/s)	23ml/s (23.87-26.73)	23ml/s (23.37-27.18)	0.9715
Urine residual (ml)	10ml (13.30.17.47)	20ml (19.36-25.64)	0.0019

Table 2 shows the statistical analysis of the urodynamic assessment as median and 95% confidence interval

INTERPRETATION OF RESULTS

The domains arousal, lubrication, satisfaction and pain significantly improved after resection of urethral diverticulum. In urodynamic assessment maximum urethral closure pressure and residual urine increased but without clinical implication.

CONCLUSIONS

Some aspects of sexual function such as arousal, lubrication, pain and satisfaction as well as clinically bothersome symptoms are likely to improve. Possibly all other domains are not influenced by the presence of urethral diverticulum. Urodynamic findings remain unchanged without relevant clinical deterioration. Long-term results are needed for interpretation of de novo SUI and recurrent UTI.

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5_ep - IS PARITY INVOLVED IN SEVERITY OF FEMALE GENITAL PROLAPSE?

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Mútua Terrassa University Hospital, Mútua Terrassa University Hospital - Barcelona University - Gynaecology, Terrassa, Spain *(1)*

1. INTRODUCTION

Pelvic floor dysfunctions are a prevalent condition in our environment, causing a real limitation of woman's quality of life and important expenditure of healthcare resources.

These dysfunctions include female pelvic organ prolapses (POP) which refers to herniation of the pelvic organs through the vaginal walls [1].

A multitude of risk factors involved in the onset of prolapse have been studied, such as: vaginal delivery, instrumental delivery, levator ani muscle avulsion, age, obesity, chronic constipation…

Although the relationship between vaginal birth and pelvic organ prolapse has been widely investigated, reviewing the most recent studies we find controversy about the role of first vaginal birth and pelvic organ prolapse onset. These studies suggest that the effect of vaginal delivery on pelvic floor prolapse seems to be associated mainly with first vaginal birth, and therefore, the impact of successive vaginal deliveries does not imply further trauma [2,3].

Regarding the findings described in previous literature, there are other risk factors which are clearly associated with pelvic organ prolapse recurrence, including levator ani muscle avulsion or woman's age at clinical symptoms onset. Nevertheless, there is still controversy about risk factors involved in pelvic organ prolapse severity, suggesting that parity could be associated with huge prolapse herniation [4].

2. AIM OF STUDY

The aim of our study has been to demonstrate if parity is a risk factor involved in prolapse severity.
The POP-Q system has been used to quantify the severity of POP at a maximum Valsalva strain.

As a second target, we have studied other epidemiological and clinical risk factors which could be involved in prolapse severity.

3. MATERIAL AND METHODS

This is a retrospective study which includes all the patients who consulted in the last 3 years in the pelvic floor unit of our hospital due to pelvic floor dysfunctions, and who have at least a history of vaginal delivery and genital prolapse (independently of its degree).

Patients with previous prolapse surgery were excluded.

The study protocol was approved by the Ethics Committee of our institution.
All participants signed an informed consent form after study procedures had been fully explained; after this consent, epidemiological, clinical examination and ultrasound variables were collected.

The main objective was studied using the variable Maximum Prolapse (I-IV) (which means the most severe grade prolapse of any compartment POP-Q classification) in relation with the variable parity considering it dichotomous: 1 vaginal delivery or >1 vaginal delivery.
We have established two groups: Mild Prolapse (Maximum prolapse I-II) and Severe Prolapse (Maximum Prolapse III-IV).

Epidemiological and clinical parameters were expressed as means (±SD) or proportions (%).
Firstly, we performed a descriptive analysis considering parity variable to detect some confounding variables. Once this process was completed, we included confounding variables in a multivariate analysis to study relation between parity and prolapse severity with logistic regression.

A probability level (p) less than 0.05 was considered significant.

All statistical analysis was performed using the STATA15.1 software (1985-2017 StataCorp LLC, Texas).

4. RESULTS

Based on the initial recruited cohort of 598 patients, 24 patients were excluded due to previous prolapse surgery, 33 patients were excluded because they did not have any vaginal delivery, and 212 patients because they did not have prolapse.
Finally, a total of 329 patients were included in our study.

The marginal distributions for epidemiological and clinical variables were summarized separately in booth groups (1 vaginal delivery or >1 vaginal delivery). They are shown in Table 1:

Table 1: Descriptive analysis.

	1 VAGINAL DELIVERY (n=65)	**> 1 VAGINAL DELIVERY (n=278)**	**p**
BMI (kg/m2) (mean +/-sd)	26,42kg/m2 (±4,59)	30,69 kg/m2 (±3,33)	0,3071*
Age (years) (mean +/-sd)	53,89 years (±12,99)	61,73 years (±11,97)	0,000*
Age at first delivery (years) (mean +/-sd)	29,34 years (±6,12)	24,19 years (±4,04)	0,000*
Largest infant weight (gm) (mean +/-sd)	3378,36 g (±507,66)	3649g(±5453,94)	0,0003*
Levator ani muscle avulsion history (%)	78,69%	71,32%	0,243**
Instrumental delivery history (%)	48,43%	24,73%	0,000**

* The comparison of means has been analysed using the T-Student test for homogeneous variances (after applying the Saphiro Wilk test that confirmed the normality of the distributions and the F Snedecor test that confirmed the homogeneity of the variances).
** Xi squared test

As we can see in Table 1 the variables “Age”, “Age at first delivery”, “Largest infant weight”, “Instrumental delivery history (%)” have not homogeneous distribution between groups. Consequently, we have included it in multivariate analysis.

Table 2: Multivariate analysis.

Variable	**Odds Ratio**	**p**	**CI 95%**
Parity	1.38	0.375	0.68-2.79
Age	1.05	0.000	1.03-1.08
Age at first delivery	1.01	0.761	0.95-1.07
Largest infant weight	1.00	0.674	0.99-1.00
Instrumental delivery history	1.30	0.373	0.73-2.3

*Logistic regression

5. CONCLUSION

Our results support the hypothesis that the first vaginal birth seems to be determinant in pelvic organ prolapse severity, and successive births do not seem to represent a greater trauma on pelvic floor.

Future work with a larger sample measure is needed to confirm these initial findings.

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6_ep - VAGINAL HYSTERECTOMY WITH COLPORRHAPHIES VS. VAGINAL HYSTERECTOMY WITH COLPOCLEISIS FOR THE MANAGEMENT OF ADVANCED PELVIC ORGAN PROLAPSE: A COMPARATIVE STUDY

Eiman Shalabna [(1)] - Nir Haya [(1)] - Rotem Sadeh [(1)] - Ofer Lavie [(1)] - Nir Kugelman [(1)] - Yoram Abramov [(1)]

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Vaginal Hysterectomy with Colporrhaphies vs. Vaginal Hysterectomy with Colpocleisis for the Management of Advanced Pelvic Organ Prolapse: A Comparative Study

INTRODUCTION:

Pelvic organ prolapse (POP) is an age-dependent condition manifesting as protrusion of the pelvic organs through the introitus. With the growing proportion of aged populations in developed countries, this condition is expected to become more prevalent and attract more attention in many parts of the world (1). While POP can sometimes be managed conservatively, it often requires surgical intervention which is generally classified into either reconstructive or obliterative procedures. While the former are more frequently utilized in the general population, the latter are reserved for the elderly and fragile patients who no longer desire future coital function. To date, only few studies have compared the outcome of reconstructive vs. obliterative techniques for the treatment of advanced POP (2, 3). In the current study we aimed to compare perioperative outcomes of vaginal hysterectomy with colporrhaphies (VHR) and vaginal hysterectomy with colpocleisis (VHC) for the treatment of advanced POP in the setup of an academic tertiary medical center.

MATERIALS AND METHODS:

This was a retrospective study analyzing medical and surgical data of all patients undergoing either VHR or VHC for the treatment of advanced POP in our institution between january 2006 and December 2015. Data were obtained from both inpatient and outpatient medical charts including demographics, comorbidities, medications and urinary symptoms. Prolapse degree was quantified using the pelvic organ prolapse quantification (POP-Q) system. Surgical data including intraoperative and postoperative complications, blood loss, hospital stay and readmission rates were recorded as well.

RESULTS:

A total of 185 patients who underwent VHR and 27 patients who underwent VHC were identified. The mean age of the study population was 68.9 ± 6.3 years. The VHC group was significantly older than the VHR group (70.9 ± 4.7 vs. 68.5 ± 6.5 years respectively, P=0.05). Patients belonging to the VHC group presented with significantly higher rates of diabetes (33.3% vs. 17.3% respectively, P=0.049), however, there were no significant differences in other medical comorbidities. Preoperatively, patients who underwent VHC had higher rates of overactive bladder (66.7% vs. 44.9%, P=0.034) and stress urinary incontinence (96.3% vs. 53.5%, P<0.0001), as well as a higher degree of uterine prolapse [4 (2-4) vs. 3 (1-4), P<0.0001]. Concomitant TVT was performed more frequently among the VHC group as compared to the VHR group (100% vs. 49.2% respectively, P<0.0001). Perioperative blood loss was significantly lower (200 ± 69.8 mL vs. 300 ±119.8 mL, respectively P<0.0001) and postoperative hospitalization stay was significantly shorter (3.8 vs. 5.1 days respectively, p<0.0001) among the VHC group as compared to the VHR group. Postoperative urinary retention was more common among the VHR group (28.1% vs. 7.4% respectively, P=0.021). Rates of other perioperative complications, as well as readmission at one month were not significantly different between the two patients groups.

CONCLUSIONS:

In this study, VHC was performed in older and more debilitated patients with more advanced degree of POP and more severe accompanying urinary symptoms than VHR. Nonetheless, this procedure was associated with lower perioperative blood loss, lower rates of postoperative urinary retention and shorter hospital stay. These findings suggest that VHC should be preferred upon VHR in older, debilitated and fragile patients who no longer desire future coital function.

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7_ep - PERINEAL OUTCOME BEFORE AND AFTER THE INTRODUCTION OF EPISCISSORS-60 AT A LARGE DISTRICT GENERAL HOSPITAL

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INTRODUCTION AND AIM OF THE STUDY

In the UK, the incidence of OASIS has increased from 1.8% to 5.9% during the period of 2000 to 2012.[1] We are uncertain as to whether this is a genuine reflection of figures, or whether there is better detection, reporting, awareness and training regarding OASIS. Literature highlights the importance of the cutting angle for an episiotomy, stating the angle achieved afterwards should be more than 45° but not greater than 60°.[2] EpiScissors-60 are surgical scissors used for episiotomy which have a fixed guide-limb at 60° to the blades. We introduced EpiScissors-60 into our maternity department in January 2017. The aim of this study is to evaluate the impact on our perineal trauma rates after the introduction of EpiScissors-60.

MATERIALS AND METHODS

This was a comparative, retrospective audit looking at a total of 60 patients' notes. This included 30 patients who delivered prior to our introduction of EpiScissors-60 (and therefore had standard scissors used), versus 30 patients whose episiotomies were cut with EpiScissors-60. All deliveries were performed on delivery suite.

Patient delivery notes were scrutinised to populate an Excel spreadsheet. The main outcome measures were the extent of perineal trauma documented and the angle of the episiotomy after suturing. Other domains recorded were: mode of delivery, level of accoucher, birthweight, shoulder dystocia, fetal head position at delivery, previous OASIS, parity, BMI and length of second stage of labour.

RESULTS

In the pre-EpiScissor-60 group (n=30), there were 24 instrumentals (22 performed by registrar, 1 by consultant) and 6 spontaneous vaginal deliveries (1 by student midwife, 5 by midwife). 24 perineums had only an episiotomy, 6 had episiotomy and a second-degree tear; of these 6, 4 were delivered with forceps, 1 ventouse and 1 SVD. An angle of between 45-60° was achieved in 21 cases. In 6 cases, no angle was documented. Three angles were <45°.

In the post-EpiScissor-60 group (n=30), there were 15 SVD (3 by student midwife, 12 by midwife) and 15 instrumentals (13 by registrar, 2 by consultant). 16 perineums had episiotomy only, with 11 also having first and second-degree tears. 2 perineums suffered third-degree tears and 1 had a fourth-degree tear. The 3 OASIS episodes recorded were from one SVD, one ventouse and one forceps. An angle of between 45-60°was achieved in 24 deliveries. In 5 cases, no angle was recorded. One angle was <45° and had no additional trauma.

Additional risk factor domains and overall incidence are recorded in the following comparison table:-

	Pre-EpiScissors-60 (n=30)	EpiScissors-60 (n=30)
Instrumentals	80%	50%
BMI	25.2	21.7
Birthweight (kg)	3.56	3.4
2nd Stage (min)	130	104
OP Position	3.7%	4.8%
Parity	87% P vs. 13% M	47% P vs. 53% M
Midwife performing	20%	50%
Overall Rate of OASIS	***0%***	***10%***

INTERPRETATION OF RESULTS

Despite our small sample sizes, it does appear that the incidence of OASIS in our unit has risen since the introduction of EpiScissors-60. Perhaps this is due to an increased awareness and detection of OASIS due to the introduction of a new instrument for episiotomy.

In the pre-EpiScissor-60 group, the angle of 45-60° post episiotomy was documented to be achieved in 70%. Perhaps this could have been as high as 90% if a further 6 patients' notes had been documented correctly. This would therefore highly support the notion that an angle of between 45-60° is protective against OASIS occurring. Furthermore, the 3 cases were an angle of <45° was achieved, these patients had very few additional risk factors (for example; birthweight <3.2kg, BMI<25, OA fetal position) so confounding factors were minimised for these patients and perhaps helped them to avoid an OASIS.

In the post-EpiScissor-60 group, again there was poor documentation of the angle achieved after episiotomy. Similarly, to the previous group, there was one post-suturing angle of <45° which sustained no additional trauma; however, this patient again had limited additional confounding risk factors.

CONCLUSIONS

Overall, we can see from this study that there is improved confidence in midwives performing episiotomy which is a positive step for the department. We acknowledge that the study is limited due to sample size, and suggest that a further study be completed with a larger sample size. Despite this study showing a greater rate of OASIS, we propose to continue the use of EpiScissors-60 within our department, introducing a mandatory training programme for midwives and re-audit the outcomes in six months.

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8_ep - PERIOPERATIVE COMPLICATIONS FOLLOWING LEFORT COLPOCLEISIS IN WOMEN WITH LOW AND HIGH FUNCTIONAL STATUS.

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INTRODUCTION AND AIM OF THE STUDY

The study aimed to investigate LeFort colpocleisis in terms of peri-operative data and adverse events according to the Clavien-Dindo classification (C-D)[1]; to analyze peri-operative data in women according to their pre-operative risks assessed with the American Society of Anesthesiologists physical classification system (ASA) and the age-adjusted Charlson comorbidity index (ACCI).

MATERIALS AND METHODS

A retrospective cohort study was performed in 52 patients who underwent LeFort colpopcleisis for stage III or IV pelvic organ prolapse (POP) in a single tertiary center. Subjects were dichotomized into two groups according to their ASA physical status classification as ASA ≤2 (high functional status) or ASA ≥3 (low functional status). Medical history was taken, patient characteristics: age, body mass index (BMI), parity, comorbid diseases, previous hysterectomy, POP or urinary incontinence (UI) surgery data were analyzed. Patients underwent POP assessment with POP-Quantification. Surgical information and complications after surgery were collected. Surgical data included concomitant procedures, type of anesthesia, operative time, pre- and postoperative hemoglobin levels, length of catheterization, and length of hospital stay.
The C-D classification, based on the level of therapy required to treat the complication, was applied. The age-adjusted Charlson comorbidity index (ACCI) to assess the preoperative risk was calculated for all individuals[2]. The ACCI predicts the 10-year mortality risk of patients based on age and 18 specific medical conditions. Each medical condition is assigned a weight, and the results are tallied. The higher the calculated index, the greater risk of mortality. The ASA classification provides six levels of functional status, including class 1 – healthy, no disease, class 2 – mild to moderate systemic disease, class 3 – severe systemic disease, class 4 – a severe, incapacitating disease process that is a constant threat to life, class – 5 and 6 moribund or brain dead.
Continuous variables were expressed as mean and standard deviation, categorical were described as percentages of the total group. The p-value of <0.05 was considered as statistically significant. Data were tested using paired or independent sample t-test, Pearson's chi-square, and Fischer exact tests. Perioperative data and risk indices were analyzed.

RESULTS

Out of 52 patients: 4 (7.7%) were diagnosed with POP-Q III stage and 48 (92.3%) – POP-Q IV. The mean age and BMI were 77.4±6.9 years (range 58-91) and 27±3.8 kg/m^2, respectively. The mean operative time was 95.6±21.6 min (median 100.0 min), and hospital stay after surgery was 4.1±1.2 days (median 4.0). The mean hemoglobin level was 12.8±1.1 g/dl preoperatively and 11.0±1.2 g/dl postoperatively (p<0.001). Previous surgery was reported in 18 (34.6%) patients due to POP, 1 (1.9%) due to UI, and 18 (34.6%) patients had hysterectomy. Anesthesia was most often regional 33 (63.5%), and general endotracheal intubation was performed in 19 (36.5%) women.
In all of the patients, partial LeFort colpocleisis was performed, accompanied by perineoplasty. Eighteen (34.6%) women had a history of hysterectomy, and in 34 (65.4%) the ultrasound assessment of endometrium was performed before the surgery. As a result, one patient underwent an endometrial biopsy as a concurrent procedure with no malignancy confirmed.
There were 28 (53.8%) women with high functional status ASA ≤2 and 24 (46.2%) with low functional status ASA ≥3. The groups did not differ in terms of demographic features such as age, BMI, parity, and preoperative POP-Q stage. Low functional status was not associated with longer operative time, higher change in hemoglobin level, number of days with a catheter, and perioperative complications. The groups did not differ in the type of anesthesia applied. The Clavien-Dindo complication rates did not differ between the groups. The Clavien-Dindo grade I was 7.1% vs. 25.0%, grade II was 7.1% vs. 0%, and grade IIIb 3.6% vs. 0% for group ASA ≤2 and ASA ≥3, respectively (p=0.15). Perioperative complications were reported in 11 (21.1%) women, with only 1 (1.9%) serious complication: return to the operating room due to bleeding. Specifically, in ASA ≤2 group, 2 wound bleedings were observed, 1 urinary tract infection, 1 unilateral foot pain, and 1 body itching required intravenous antihistaminic. In ASA ≥3 group, 3 wound bleedings, 1 fall, 1 UI de novo, and 1 unilateral foot pain were observed. There was no operative mortality. All patients were discharged home without a bladder catheter. Low preoperative functional status was not associated with increased length of stay in a medical facility (p=0.39).

Co-morbidities were more prevalent in the ASA ≥3 group than in the ASA ≤2 group, with diabetes, hypertension, ischemic heart disease, cardiovascular disease, and chronic kidney disease significantly more frequent. Women in ASA class 3 were significantly more likely to have a higher ACCI score than women in class 2, median 6 vs. 4, p<0.001.

INTERPRETATION OF RESULTS

Almost half of the women undergoing LeFort colpocleisis were in low functional status. Functional status measured as ASA ≥3 was not associated with higher operative time, postoperative change in hemoglobin, percentage of complications, and longer duration of catheterization. A low rate of serious complications (1.9%) was observed in LeFort colpocleisis operation. If the median hospital stay is 4 days, the preoperative low functional status did not prolong the postoperative length of stay.

CONCLUSIONS

LeFort colocleisis is a safe option for advanced pelvic organ prolapse surgery in women with low functional status and multiple comorbidities.

Table 1 Characteristics of the study group

	High functional status ASA ≤2 (n=28)	**Low functional status ASA ≥3** (n=24)	**P**
Age (years)	76.3 ± 7.6	78.6 ± 5.8	0.22[a]
BMI (kg/m^2)	26.9 ± 3.4	27.1 ± 4.4	0.82[a]
Parity	2.0 ± 1.1	2.6 ± 1.6	0.17[a]
Pre-operative POP-Q stage **III** **IV**	 3 (10.7%) 25 (89.3%)	 1 (4.2%) 23 (95.8%)	0.38[b]
Previous surgeries (number) **prolapse surgery** **hysterectomy** **incontinence surgery**	 11 (39.3%) 9 (32.1%) 1 (3.6%)	 7 (29.2%) 9 (37.5%) 0	 0.44[c] 0.69[c] 1.00[c]
Operative time (min)	93.0 ± 26.6	98.7 ± 15.9	0.36[a]
Pre-operative hemoglobin (g/dl)	13.0 ± 1.0	12.5 ± 1.1	0.07[a]
Post-operative hemoglobin (g/dl)	11.2 ± 1.3	10.8 ± 1.1	0.22[a]
Change in hemoglobin (g/dl)	-1.9 ± 1.1	-1.7 ± 0.8	0.57[a]
Duration of catheterization	3.3 ± 0.7	3.2 ± 1.0	0.60[a]
Hospital stay (days)	4.3 ± 1.0	4.0 ± 1.4	0.39[a]
Anesthesia **Regional** **General**	 17 (60.7%) 11 (39.3%)	 16 (66.7%) 8 (33.3%)	1.00[c]
Concurrent procedures	1 - Amputation of cervix	2 - D&C - cervical biopsy	0.58[c]
Complications in Clavien-Dindo grade **C-D I** **C-D II** **C-D IIIb**	 2 (7.1%) 2 (7.1%) 1 (3.6%)	 6 (25.0%) 0 0	0.15[b]
Age adjusted CCI (median)	3.53 ± 0.96 (4)	5.75 ± 1.40 (6)	**0.001[a]**
Comorbid conditions **Hypertension** **Diabetes** **Ischemic heart disease** **Cardiovascular disease** **Pulmonary disease** **Chronic kidney disease** **History of cerebrovascular event** **Cancer**	 16 (57.1%) 3 (10.7%) 4 (14.3%) 9 (32.1%) 1 (3.6%) 2 (7.1%) 1 (3.6%) 2 (7.1%)	 21 (87.5%) 12 (50.0%) 14 (58.3%) 18 (75.0%) 5 (20.8%) 7 (29.2%) 1 (4.2%) 2 (8.3%)	 **0.01[c]** **0.001[c]** **0.000[c]** **0.002[c]** 0.052[c] **0.036[c]** 0.91[c] 0.87[c]

[a] – t-test; [b] – Pearson chi^2 test, [c] – Fisher exact test, data presented as mean ± standard deviation or n (%)
ACCI – age adjusted Charlson comorbidity index, BMI – body mass index, D&C – dilation and curettage, POP-Q – Pelvic Organ Prolapse Quantification

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9_ep - NEO-PUBOCERVICAL FASCIA FOR THE TREATMENT OF ADVANCED PELVIC ORGAN PROLAPSE

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INTRODUCTION AND AIM OF THE STUDY

Restoring pelvic organs' support is based on site specific surgical repair. Delancey's Level II support is constructed mainly by the Pubocervical fascia (PCF) supporting the anterior vaginal wall, while the Uterosacral and Cardinal ligaments provide vaginal apex support – Delancey's Level I. This study describes a synthetic replacement of the PCF as a reconstructive method for the treatment of anterior vaginal wall prolapse with or without apical prolapse.

MATERIALS AND METHODS

This is a prospective international study. Patients with advanced anterior wall prolapse were offered surgical reconstruction of the PCF using an ultralight, tetanized polypropylene implant which shape, and location imitate the physiologic structure of the PCF. The implant is stretched laterally between both the arcus tendinous fascia pelvis (ATFP), extends distally to the pubic bone and proximally to the cervix at the level of the ischial spines. The tetanized polypropylene "neo fascia" is stretched and retained by a biocompatible solid U-shaped frame. Its arms extend toward the ischial spines, imitating the ATPF, and a connecting part which imitates the attachment to the pubic arch under the urethra (Fig 1). Patients who underwent the surgical treatment using the implant were followed on a yearly basis using objective measurements - Pelvic Organ Prolapse quantification system (POP-q) and subjective measurements - validated QoL questionnaires (PFDI-20 and PISQ-12). Pre, intra and post-operative data and complications were documented. Anatomical success outcome was defined as Ba/C < -1cm. Subjective success outcome was defined as a negative response to the PFDI-20 question number 3.

RESULTS

The research received all regulatory approvals and was conducted in 4 hospital by 6 urogynecologists. 70 women with symptomatic advanced pelvic organ prolapse were recruited for the study and signed an informed consent. Mean age was 63.1 (43-79) years, mean parity was 4.6 (1-16) deliveries, mean BMI was 27.1(20.3-36.6) Kg/m^2. Preoperative POP-q measurements were Ba=3.1 (-1 to 6) cm and C=0.4 (-8 to 6) cm. Mean time for implantation was 25.7min. No intra or immediate post-operative complications were documented. Patients were followed on a yearly basis with an average follow up of 34.0 (12.5-41) months. Postoperative objective outcome at follow up were: Ba= -2.88 ((-3) - (-1))cm and C= -6.88 (-10 - 1) cm. Complications reported during the follow up period included 1 case of frame erosion 32 weeks after surgery and 1 case of voiding dysfunction at 42 weeks post-surgery, both required partial resection of the implant. 2 cases of de-novo stress urinary incontinence were treated with mid urethral sling one year following surgery. No chronic pain at the surgical site was documented. PFDI-20 scores were significantly (MCID >15 per domain) improved from 40.3 to 19.1 in the UDI-6 (urinary domain) and from 41.4 to 10.8 in the POPDI-6 (prolapse domain). Thirty-two patients agreed to answer the PISQ-12 questionnaire revealing no evidence of dyspareunia or other de-novo sexual dysfunction.

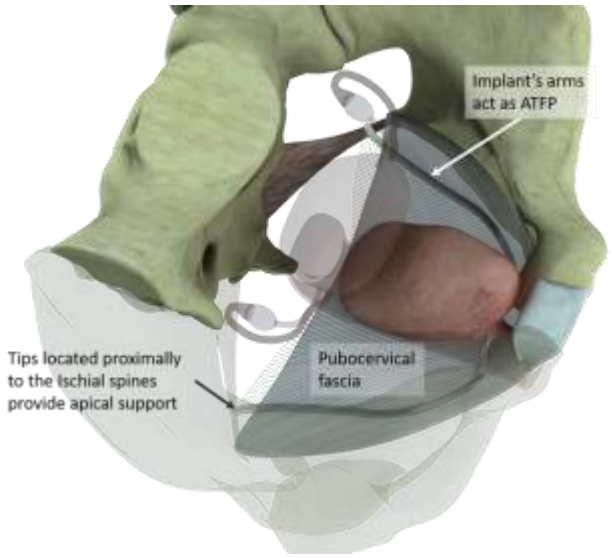
INTERPRETATION OF RESULTS

The results of the study reveals that a synthetic replacement - neo fascia - of the PCF can provide a successful reconstructive tool in the surgical treatment of advanced anterior compartment with or without apical prolapse.

CONCLUSIONS

Reconstruction of advance anterior wall prolapse using a synthetic implant with the shape and location of the PCF can provide a safe and effective surgical solution for anterior compartment with/without apical compartment involvement with 98.6% subjective and 95.7% anatomical improvement at medium term average follow up of 34.0 months.

Fig 1: Neo-PCF shape and location



10_ep - MESH-AUGMENTED TRANSVAGINAL REPAIR WITH CALISTAR S IN WOMEN WITH RECURRENT OR COMPLEX ANTERIOR PELVIC ORGAN PROLAPSE ACCORDING TO THE SCENIHR-RECOMMENDATIONS ON UROGYNECOLOGICAL SURGICAL MESHES

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INTRODUCTION AND AIM OF THE STUDY

Mesh-augmented repair of pelvic organ prolapse (POP) has been currently scrutinized and numerous meshes have been vanished from worldwide marked, yet. Nevertheless, further development of mesh design, patient selection as well as the experience of the surgeon have been identified to be crucial factors for decreasing significantly the incidence of mesh complications. There is agreement by several urogynecological associations that the utilization of mesh-augmented repair is still beneficial in a defined population which include women with complex and recurrent prolapse on the condition that surgery is performed by experienced surgeons in pelvic floor reconstruction. Therefore, this investigation aims to evaluate transvaginal mesh-augmented repair with the ultra-lightweight mesh Calistar S (Promedon, Cordoba, Argentina) in women with recurrent or complex anterior POP prolapse with or without apical vaginal wall involvement.

MATERIALS AND METHODS

After approval of the local ethics committee (Number 60750/2019/99), a total of 107 women who underwent transvaginal POP repair with Calistar S for either recurrent or complex anterior POP have been included in this multicenter cohort trial. Surgeons were experienced in transvaginal pelvic floor reconstruction. The indication for mesh-augmented POP repair in both study centers were conform with the SCENIHR-opinion on the safety of surgical meshes used in urogynecological surgery (1), thus, only women with recurrent prolapse or primary POP with high risk of recurrence were considered for mesh-augmented repair. Additionally, only non-fertile women were considered for a mesh implant. Furthermore, Calistar S fulfils the proposed requirements for implants in transvaginal POP repair according to the SCENIHR recommendations and implantation was performed only by experts in pelvic floor reconstruction via vaginal route.

Baseline characteristics and perioperative assessment have been evaluated retrospectively. Prospective assessment of treatment success and complication have been performed by a clinical appointment for vaginal examination and medical history. Validated questionnaires have been utilized to evaluate Quality of life and POP symptoms.

Descriptive statistics has been applied. Complication free survival has been estimated by Kaplan-Meier-method. The significance level was set at 5%.

RESULTS

There were 93 (86.9%) and 14 (13.1%) women with recurrent or complex POP respectively. The mean age was 70.6 years (SD 7.7) and 105 (98.1 %) women were postmenopausal. Two women were not postmenopausal; however, both had prior hysterectomy. The mean operation time was 37.7 (SD 17.3) minutes. There were no intraoperative complications. Mean follow-up time was 18.5 months.

Anatomic cure defined by POP-Q ≤ 1 was 98 % and no women required repeated surgery for anterior or apical POP. Quality of life improved significantly relative to baseline ($p<0.001$) as well as the domain prolapse symptoms ($p<0.001$, Figure 1) according the validated German Pelvic Organ Prolapse Questionnaire. Furthermore, 99 (91.7%) women were satisfied or very satisfied with the operation.

Vaginal exposure occurred in 6 (5.6%) patients. However, all exposures were treated either expectantly or with vaginal estrogen therapy. In one patient, an exposed suture was cut during ambulatory vaginal examination. 4 (3.7%) patients required catherization due to persistent symptomatic residual urine, thus, residual urine was already present at baseline in these patients. The mean pain score according VAS was 0.13. The estimated erosion free survival was 93% after 36 months (Figure 2).

INTERPRETATION OF RESULTS

The anatomical success rate of 98 % was consistent with previously reported success rates for mesh-augmented anterior POP repair (2). However, in contrast to previous reports of mesh-augmented repair, it is important to note that the vast majority of our patients presented with recurrent or complex POP instead of a primary POP, so that the overall complexity of our cohort was considerably higher, despite similar success rates.

Vaginal mesh exposure occurred in 5.6 % of the patients in our study, and the estimated exposure-free rate was 93 % after 20 months. Since none of our patients required further surgery up to the follow-up, all exposures could be managed conservatively. The reported exposure rates are consistent with literature which are reported between 3.2 and 14 %. Importantly, exposure rates have decreased successively in the last decade due to stricter patient selection, advancements in mesh compounds and design, and improvement of surgical techniques. Additionally, the ultra-lightweight design of Calistar S aims to further reduce exposure rates.

CONCLUSIONS

Considering the SCENIHR recommendations for a suitable mesh implant, adequate patient selection and surgeon experience in transvaginal pelvic floor reconstruction, our study demonstrates that mesh-augmented transvaginal repair with Calistar S is an effective and safe option in women with recurrent or primary complex anterior compartment prolapse. Although the majority of our patients had recurrent prolapses, success rates remained high and re-intervention rates for recurrence or adverse events were minimal in this select population.

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Figure 1: *Comparison of prolapse symptoms between Baseline and Follow-Up according German pelvic organ prolapse questionnaire*

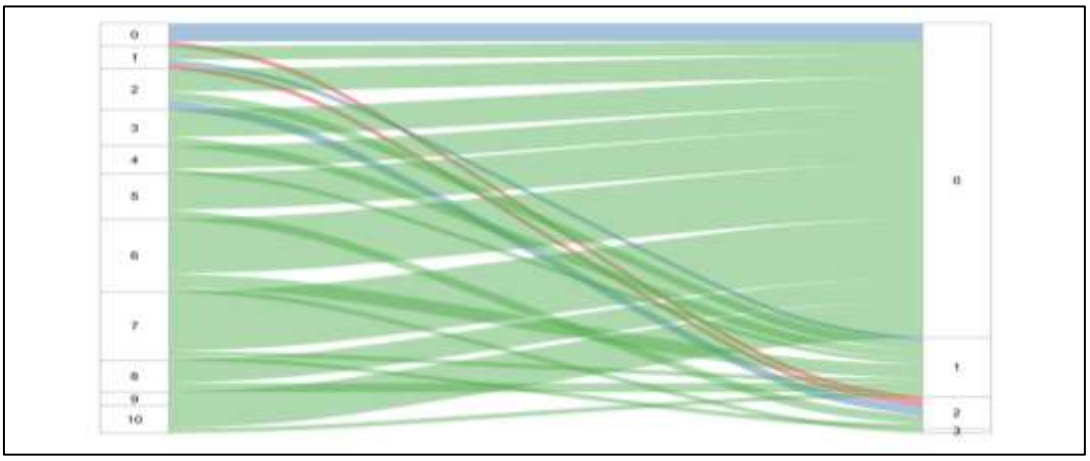
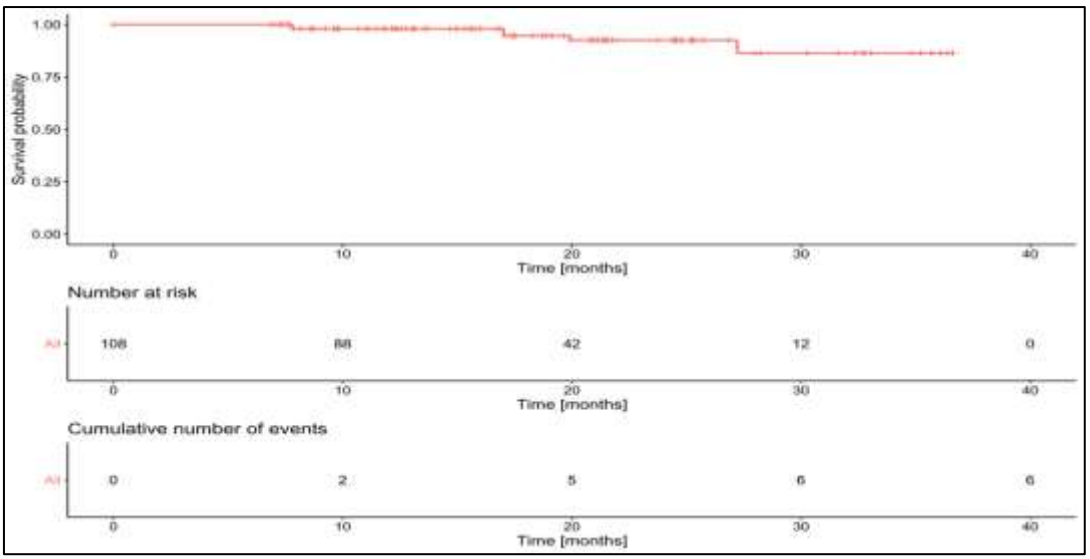


Figure 2: *Erosion free survival estimated according Kaplan Meier method*



11_ep - DETERMINING A NEW CUT OFF OF RELATIVE NOCTURNAL URINE PRODUCTION TO DEFINE NOCTURNAL POLYURIA

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INTRODUCTION AND AIM OF THE STUDY

Nocturia is associated with a significant reduction in quality of life and is the most troublesome lower urinary tract symptom (1). Nocturnal polyuria (NP) is the commonest cause of nocturia and is defined as excessive production of urine during the individual's main sleep period'(2). However, it is acknowledged that precise values for 'excessive' need to be identified through research. Definitions proposed for NP can be divided into absolute or relative. Absolute are based on rates of urine of nocturnal urine production (NUP) whereas relative definitions account for total urine produced over 24 hours. A commonly used relative definition for NP is when nocturnal urine volume exceeds 33% of 24 urine volume for women over 65 and 20% in women under 65(3). This is loosely based on uniform urine production throughout the day, and women spending a third of it asleep.

The aim of this study was determine the distribution of relative NUP (rNUP) across a population attending the Urogynaecology clinic. We aimed to use this distribution to generate a normal range of values in order to identify women with NP. We then wanted to see if this was associated with reported nocturnal symptoms such as nocturia and nocturnal enuresis.

MATERIALS AND METHODS

Bladder diaries were completed by women attending the Urogynaecology clinic. Data were collected on volume of urine output during the day and night and presenting symptoms.

rNUP was calculated (nocturnal volume/24 hour volume). Mean and standard deviations were generated. A cut off for normal night-time urine production was defined as 95th centile of the normal distribution.

All patients with nocturnal urine >95th centile were classified as NP. Rate of nocturnal symptoms were identified in both groups of women and odds ratio calculated.

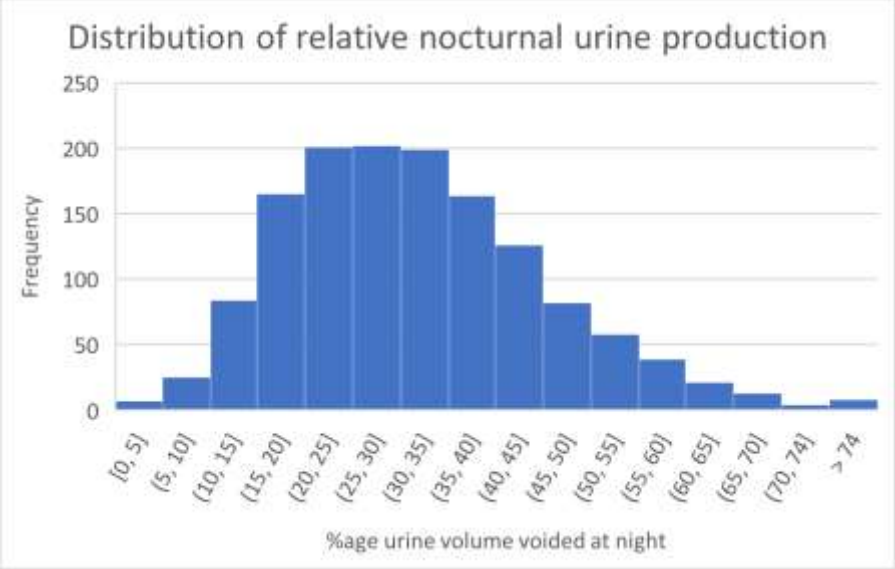
RESULTS

1398 completed bladder diaries were receive. Relative nocturnal urine production was calculated. This was plotted on a histogram.

The mean rNUP was 31.8% and standard deviation 13.9%. 95th centile cut off was 54.8%. All women with rNUP >54% were classified as NP.

85 women were diagnosed with NP and 1313 as normal.

21.2% of women diagnosed with NP reported nocturnal symptoms compared to 2.8% of the women with normal rNUP. This generates an odds ratio of 9.27.



INTERPRETATION OF RESULTS

Here we have demonstrated the range of rNUP across a population of women attending the Urogynaecology clinic. The commonly used cut offs of 20% for under 65s or 33% in over 65s will overdiagnose NP in the the women we have studied. A higher threshold of >54% will ensure that women diagnosed with nocturnal polyuria are much more likely to demonstrate nocturnal symptoms.

We acknowledge that this highly specific cut off may not be useful across all practice, and that the normal range has been generated from a group of symptomatic women. Therefore further work should be done to identify the normal rNUP in asymptomatic individuals and model other cut-offs. Diagnostic criteria should also be compared to outcomes of treatment to help optimise the patient pathway.

CONCLUSIONS

Using rNUP as a marker of NP is useful as it accounts for women producing excess urine over a 24 hour period (compared to absolute NUP). Current cut-offs have been arbitrarily defined and here we have attempted to generate a normal range and correlate with symptoms. Using >54% rNUP, gives us a cut off which is highly specific but not sensitive for nocturnal symptoms. This may be useful in clinical practice where over diagnosis should be avoided.

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12_ep - OBSTETRIC OUTCOMES AFTER UTERUS-SPARING SURGERY FOR UTERINE PROLAPSE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION AND AIM OF THE STUDY

Pelvic organ prolapse (POP) is a common clinical condition in menopausal women. However, it may also affect fertile parous women, who may be bothered by vaginal bulging, urinary incontinence, voiding dysfunction, bowel disorders or sexual symptoms [1, 2]. POP conservative management involves pelvic floor muscle training and vaginal pessary and may be the treatment of choice according to prolapse stage, symptoms, general health status and patient preference [3]. Up-to-date there are no guidelines about uterus-sparing prolapse repair procedures for women desiring childbearing, since available papers report only few pregnancies. As a consequence, it is difficult for physicians to counsel young women wishing for childbearing about the safest option, in terms of obstetrical outcomes. This systematic review and meta-analysis aims to evaluate obstetrical outcomes after uterus-sparing apical prolapse repair in terms of pregnancy rate, obstetrical adverse outcomes and delivery mode according to the type of procedure.

MATERIALS AND METHODS

To identify potentially eligible studies, we searched PubMed, Scopus, Cochrane Library and ISI Web of Science (up to April 15, 2020). We used a combination of keywords and text words represented by "hysteropexy", "uterus-sparing", "uterine-sparing", “uterine preservation”, "uterus preservation", “sacrohysteropexy”, “hysterosacropexy” and “pregnancy", "pregnant", "obstetric outcomes", “labour”, "delivery", “cesarean section”.

RESULTS

Twenty-four studies met inclusion criteria and were incorporated into the final assessment, which included 1518 surgical procedures. In total 151 patients got pregnant after prolapse surgical repair, for a resulting pregnancy raw rate of 9.9%. Pregnancy rates adjusted for the portion of women looking for pregnancy ranged very widely and were not available for all considered procedures. Cesarean section was performed in 72 patients (47.7%). Overall, adverse obstetric outcomes resulted low, rating 4.6%. Manchester procedure resulted associated with the highest risk of adverse obstetrical outcomes and preterm premature rupture of membranes ($p<0.0001$). After exclusion of Manchester procedure, sacrohysteropexy was found to be associated with higher risk of obstetrical adverse outcomes compared to native-tissue procedures ($p=0.04$).

INTERPRETATION OF RESULTS

Most of the considered papers are case series and retrospective studies, which can lead to inaccurate or biased results. Data about patients who actually searched for pregnancy after surgery is not always reported and in many studies only the proportion of premenopausal women can be extracted. Moreover, pregnancy outcomes information in the considered studies are scattered and likely incomplete. Moreover, no conclusion could be made with respect to delivery mode, since in most studies the indication to perform elective cesarean section was made by Authors basing on their experience much more than on obstetrical indications. This heterogeneity reflects the lack of guidelines about the management of pregnancy and delivery management after POP surgical repair. All the accounted limitations strongly suggest that there is need to be more systematic about pregnancy outcomes when reporting results of POP uterus-preserving surgery.

CONCLUSIONS

Manchester procedure is not recommended for patients with childbearing desire. Mesh surgery was associated with higher risk of obstetrical adverse outcomes compared to native-tissue surgery, which may represent the most cautious option for women wishing for pregnancy.

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13_ep - THE ANALYSIS OF THE CORRELATION BETWEEN URETHRAL LENGTH AND URETHRAL MOBILITY (PELVIC FLOOR SONOGRAPHY), FUNCTIONAL URETHRAL LENGTH AND MUCP (URODYNAMICS).

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INTRODUCTION AND AIM OF THE STUDY

Stress urinary continence in women is achieved by a combination of factors that are poorly understood. It is known that urethral hypermobility and resting urethral pressure can largely explain stress urinary incontinence (SUI) in women, with maximal urethral closure pressure, likely to be the factor most strongly associated with stress incontinence [1].

Patients with SUI symptoms often decide to have an operation. However, the outcome of SUI surgery can be unpredictable. It is known that poor mobility, short urethra and low value of MUCP are risk factors for failure of the SUI surgical treatment [2].

Pelvic floor ultrasound is more often used to evaluate urogynecologic patients, for example for measurement of the urethral length and mobility. Repeatability and reproducibility of point CI location and mobility were good and very good (0.6710-0.9961), for urethral length ranged between 0.81 and 0.9873 [3, 4].

Urodynamics is often used to evaluate urogynecologic patients. Profilometry in some centers is used, in others is abandoned. During profilometry it is possible to measure maximal urethral closure pressure (MUCP) and functional urethral length. Repeatability and usefulness of these parameters is controversial.

The aim of this study was to evaluate the correlation between length and mobility of urethra (ultrasound), MUCP and functional urethral length in urodynamics.

MATERIALS AND METHODS

A prospective study was performed among 106 patients with SUI before suburethral tape implantation. The mean age of analyzed women was 60.8 years (from 47 to 77).

Pelvic floor sonography with transvaginal probe (PFS-TV) followed a standardized technique developed by Kociszewski using Philips EnVisorC, Hitachi EUB-525 and BK Pro Focus Introital ultrasound was performed with a 2D, high frequency (6.5 MHz, emission angle of 160°) transvaginal probe in a patient sitting in a half-reclined position in a gynecology chair. The transducer was placed over the external orifice of the urethra, its axis aligned with the body's axis, with minimal pressure exerted on the examined area. The pubic symphysis (which was the sole fixed orientation point), the urethra, and the bladder neck were all depicted in one image, and the sonographic urethral length was measured in the sagittal axis [2]. The location of the urethral internal orifice was defined with coordinates of two points. Point CI marks the urethral anterior edge visualized on ultrasound as closer to the pubic symphysis. For quantitative determination of the urethral mobility two parameters were assumed: bladder neck descent distance (BND) and the vector parameter in the XOY coordinate system [3].

Measurements were obtained after filling the bladder with 250 ml of saline during urodynamics.

Urodynamics was performed by Andromeda Ellipse device. After filling the bladder with 250 ml of saline, MUCP and functional length of the urethra were evaluated.

Statistical analyses were performed on program Statistica 7.1 of StatSoft Poland. Preliminary database was prepared in Excel.

RESULTS

We found slightly positive correlation between MUCP and mobility vector (r=0.0997, p=0.3). The same correlation was found between MUCP and BND (r=0.0771, p=0.43). However the correlation level was low, it looks like the lower MUCP occurred more often in patient with less mobile urethra. High p may be connected with two different methods of measurement (ultrasound and urodynamics). It is also known that MUCP is influenced by many factors, so the value is not always absolute value of closure pressure.

The analysis of dependence on MUCP and urethral length measured in ultrasound showed that among patients with shorter urethra there were a higher values of MUCP (r= -0.197, p=0.0433).

No significant correlations were found between the sonographic length of the urethra and the mobility vector parameter during pressure (r=- 0.10; p=0.293), as well as between the ultrasound length of the urethra and the BND mobility parameter (r=-0.10, p=0.2897).

Urethral length measured in UDS was different than measured in ultrasound. The functional urethra length measured in urodynamic testing did not correlate with actual urethral length measured in ultrasound. The ultrasound allows for segment readings with an accuracy of 0.1 mm, while the urodynamic test allows for readings with 10 times less accuracy (up to 1 mm).

INTERPRETATION OF RESULTS

The shorter urethra was correlated with higher MUCP values. There seems to be a lower MUCP more common in patients with a less mobile urethra. The length of the urethra does not appear to affect its mobility.

The results showed that the functional length of the urethra in urodynamic studies is different from that measured by PFS-TV.

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14_ep - SEXUAL FUNCTION AFTER LAPAROSCOPIC ANTERIOR VAGINAL WALL PROLAPSE SURGERY IN NON MENOPAUSAL WOMEN

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INTRODUCTION AND AIM OF THE STUDY

Enhancing the quality of life of the patients is the goal of treating pelvic organ prolapse (POP). The effect of prolapse on the sexual function of women have been reported in several studies but there is still a debate in the literature about the impact of the surgical technique on restoring the sexual function after anterior vaginal wall prolapse surgery. The aim of this study was to compare female sexual function after surgical treatment of anterior vaginal prolapse with either laparoscopic pectopexy or sacrohysteropexy.

MATERIALS AND METHODS

It is a prospective study. All patients schedualed for an anterior vaginal wall prolapse surgery were included. There was no randomization but the choice of the surgical technique was discussed during a pre operative meeting taking into consideration the patients and the surgon carachteristics. Patients were divided into 2 groups : laparoscopic pectopexy (n=40) or laparoscopic sacrohysteropexy (n=40). Patients with concomittant urinary incontinence were excluded. Postoperative outcomes were analyzed at 6 months. The arabic version of the Female Sexual Function Index questionnaire (FSFI) [1] was used to assess sexual function. Data were compared with independent samples or a paired Student's t-test.

RESULTS

Both groups were comparable in terms of age, smoking habits, parity, history of ceasarean section and pelvic surgery, characteristics of the POP and body mass index. In the pectopexy group, the total mean FSFI score increased from 16.2 ± 3.8 to 23.8 ± 4.2 (p= 0.001). In the sacrohysteropexy group, the total mean FSFI score increased from 15.8 ± 4.7 to 22.2 ± 3.5 (p =0.003). There were no differences between the two groups neither preoperatively nor at the 6 month follow-up. Statistically significant improvements were noted in both groups in the domains of desire, arousal, lubrication and orgasm. There was no statistically significant improvement in the domaines of satisfaction (2.9 ± 1.2 vs 3.5 ± 1.0; p= 0.08) and pain (3.1 ± 1.5 vs 4.0 ± 1.4; p= 0.07) only in the sacrohysteropexy group.

INTERPRETATION OF RESULTS

Our results suggest that, in non-menopausal women, both laparoscopic pectopexy and sacrohysteropexy improve the global scores of sexual function after anterior vaginal wall prolapse surgery. But these results may occult some disparities in favour of the pectopexy regarding the sexual satisfaction and dyspareunia. In fact in the sacrohysteropexy group there is no improvement in those 2 domains of female sexuality but there is no harm either.

CONCLUSIONS

Laparoscopic pectopexy and sacrohysteropexy both improved globally the sexual function after anterior vaginal wall prolapse surgery in non-menopausal women. However, only laparoscopic pectopexy improved the sexual satisfaction and dyspareunia at the 6 months follow-up.

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15_ep - VAGINAL HYSTERECTOMY AND MCCALL CULDOPLASTY USING INTRAOPERATIVELY URETERIC STENTS: PRELIMINARY RESULTS

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INTRODUCTION AND AIM OF THE STUDY

Pelvic organ prolapse (POP) is the result of loss of supportive capacity of the pelvic fascia and pelvic floor muscles and joints and it is the main indication for hysterectomy in menopausal women (14-19% of gynecological interventions at all ages) (1,2). POP is primarily treated with surgery and there are a number of effective operations. The decision for the type of surgery depends on the preference of the surgeon, the patients' age and on the patient's desire to preserve sexual function. There are several surgical options to reconstruct the apical prolapse, vaginally, abdominally or endoscopically. The uterosacral ligaments are widely used in pelvic surgery as support for the correction of the apical compartment. The McCall culdoplasty is one of these techniques. It was initially developed to obliterate the pouch of Douglas and to prevent enteroceles but nowadays it is commonly used for vaginal vault suspension during vaginal hysterectomy (3). It requires a good knowledge of the anatomy for assuring the optimal results and to avoid any potential complications. The aim of the study was to compare the post-operative results of women who underwent vaginal hysterectomy and McCall culdoplasty using intraoperative ureteric stents, in terms of immediate complications and short-term anatomical support.

MATERIALS AND METHODS

Non-randomized cross-sectional study using a control group from October 2017 to May 2020 in a Tertiary Center of Urogynecology. Entry Criteria: Symptomatic genital prolapse affecting quality of life and age >18 years. Exclusion criteria: history of malignant disease, surgery in the genital area, and history of chronic inflammatory or autoimmune diseases. All patients were examined clinically and underwent surgical repair of the prolapse. All women had a vaginal hysterectomy ± bilateral oophorectomy + McCall culdoplasty + anterior/posterior vaginal repair. In the study group, ureteric stents were cystoscopically inserted bilaterally at the beginning of the operation (Single-Lumen CV catheter, Bard); intra-operatively, during the placement of the McCall sutures the surgeon performed a digital control of the distance between the ureters and the McCall sutures in order to secure the safety of the ureters; finally, after the end of the procedure the stents were removed. The McCall culdoplasty was performed in both groups with a J-shaped Vicryl 1.0 (external suture) and a J-shaped PDS 1.0 (internal suture). Post-operatively, all patients were evaluated at 3 months with clinical examination using the POP-Q classification system.

RESULTS

62 consecutive women with POP were recruited and were arbitrarily allocated in the study and the control group (31 patients each group). Women with more severe POP were more frequently allocated in the study group. Demographically, the mean age, the mean BMI and the mean parity were 63.1±9.5 years, 28.0±4.1, 2.3±0.3 children, and 62.9±8.3 years, 29.1±4.3, and 2.4±0.8 children in the study and in the control group, respectively (p>0.05). Pre-operatively, POP-Q C was significantly greater in the study group (+5.0±3.8 vs +1.1±5.3, p=0.002). All procedures were completed without any major complications and no case of ureteric damage was encountered during or after the procedures. Three-months and 6-

months post-operative POP-Q measurements were not significantly different between the two groups; however, the post-operative change in POP-Q C values were significantly greater in the study group (10.2±5.7 vs +6.7±6.1, p=0.023).

INTERPRETATION OF RESULTS

Ureteric stenting during McCall's culdoplasty significantly increases the post-operative anatomical correction of the POPQ point C in cases with more severe uterine prolapse. McCall's culdoplasty requires as high a suspension of the vaginal stump as possible while safeguarding the adjacent ureters in the area.

CONCLUSIONS

The placement and maintenance of the ureteral stents during McCall culdoplasty seems to provide the surgeon with the necessary safety along with a satisfactory outcome and less chance of recurrence.

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Table 1. Baseline demographics of the patients

Characteristic	Study Group Ureteric Stents	Control Group Non-ureteric Stents	p
Age	63.1 (±9.5)	62.9 (±8.3)	N.S.
Body Mass Index	28.0 (±4.1)	29.1 (±4.3)	N.S.
Parity	2.3 (±0.5)	2.4 (±0.8)	N.S.
Menopause	0.9 (±0.3)	0.9 (±0.3)	N.S.

Values are expressed as: mean (standard deviation), N.S.= non-significant

Table 2. Pre-operative POP-Q measurement, Post-operative POP-Q measurements, and differences between the POP-Q points at the final examination

	Pre-Operative			Post-Operative			Change		
	Ureteric Stents	Non-Ureteric Stents	p	Ureteric Stents	Non-Ureteric Stents	p	Ureteric Stents	Non-Ureteric Stents	p
Ba	4.5 ± 3.1	3.8 ± 2.9	.34	-2.2 ± 0.7	-1.9 ± 1.0	.16	6.7± 3.3	5.7± 3.0	.20
C	5.0 ± 3.8	1.1 ± 5.3	.002	-5.3 ±4.7	-5.7 ± 2.9	.69	10.2 ± 5.7	6.7 ± 6.0	.02
TVL	10.0 ± 2.0	10.3 ± 2.5	0.61	7.0 ± 4.4	8.1 ±1.4	.20	3.0 ± 4.9	2.2 ± 3.0	.46
Bp	0.55 ± 2.2	-0.3 ± 2.0	0.13	-2.0 ± 0.7	-2.1 ± 0.8	.60	2.6 ± 2.2	1.8 ± 2.0	.18

Note: Student's test, Levene's test is significant ($p < .05$), suggesting a violation of the equal variance assumption, POP-Q: Pelvic Organ Prolapse Quantification system

16_ep - IS BLADDER INJURY DURING CESAREAN DELIVERY A RISK FACTOR FOR DEVELOPING OVER ACTIVE BLADDER IN THE FUTURE?

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INTRODUCTION AND AIM OF THE STUDY

Urinary bladder injury is one of the rare complications that may occur during cesarean delivery (CD). Notably, it may cause formation of scar tissue in the injured bladder. Little is known about long-term maternal complications or bladder function following iatrogenic bladder injury. Therefore, we aimed to study the rate and severity of overactive bladder symptoms in patients who had bladder injury during CD.

MATERIALS AND METHODS

This was a retrospective analysis of all woman who had bladder injury during CD between 2007 and 2019, in one medical center. Data was extracted from the institutional bladder trauma database. Only cases with full thickness bladder injury included. Maternal and delivery characteristics were compared between patients with bladder injury and control group, which consisted of patients who underwent CD during the same study period. Cases (n=38) were matched to controls (n=38) by age, parity, and number of previous CDs. Long term follow up of urinary related complaints was studied using the urinary distress inventory index (UDI-6) questionnaire, by telephonic interview.

RESULTS

During the study period there were 43 cases of bladder injuries out of 12,322 CDs (0.35%). Only 38 cases were eligible for analysis, while 27 women in the study group and 35 in the control group agreed to participate in the UDI-6 questionnaire. There were no between groups differences regarding maternal and obstetric characteristics (Table 1). Median follow up period was 67 months (range 12-158 months). The UDI-6 score regarding over active bladder symptoms, was significantly higher in the study group as compared to controls (1.07± 1.46 vs 0.31 ± 0.9, respectively, p=0.014). The score was significantly higher among the study group as compared to controls, for nearly all questions in the UDI-6 questionnaire, including questions aimed to detect urinary stress incontinence (Table 2).

CONCLUSION

Bladder injury during CD might has long term outcome on bladder function, with increased rate of lower urinary tract symptoms, specifically overactive bladder symptoms.

Table 1. Demographic characteristics of the Bladder injury group and control group

	Bladder injury group n=37	Control group n=38	P value
Medical history:			
Age, (years),	33.45±4.86	33.63±5.79	0.886
BMI, (kg/m^2)	24.39±4.57	26.55±7.19	0.194
Parity	2.63±1.72	2.66±0.79	0.881
Prior CDs	2.05±0.8	2.2±0.56	0.193

SD: standard deviation, n: Number, BMI – body mass index, CD – cesarean section

Table 2. Incontinence reports of study participants

UDI-6 questions	Bladder Injury n=27	Control n=35	P value
Q1. Do you usually experience frequent urination?	40.7±38.69	12.14±29.31	0.001
Q2. Do you usually experience incontinence related to a sense of urge?	26.92±36.69	7.85±22.5	0.014
Q3. Do you usually experience incontinence related to sneezing, coughing or laughing?	29.80±39.38	11.42±21.30	0.022
Q4. Do you usually experience leakage of small amounts of urine?	3.84±11.6	7.85±19.9	0.362
Q5. Do you usually experience trouble emptying your bladder?	12.5±22.63	2.14±7.10	0.013
Q6. Do you usually experience discomfort or pain in your lower abdomen or genital area?	22.11±36.2	7.1±11.45	0.025
Results reported as mean +- SD			

17_ep - AUTOLOGOUS RECTUS FASCIAL SLING FOR STRESS URINARY INCONTINENCE- SHORT TERM FOLLOW-UP RESULTS

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INTRODUCTION AND AIM OF THE STUDY

Recent concerns about mesh use and restrictions have now reintroduced mesh free alternative procedure for stress urinary incontinence (SUI) with equivalent success however without any mesh related complications. We describe our single centre experience and success rates for autologous rectus fascial sling (ALRFS) for treatment of SUI. Objective of our study was to review success and complication rates for ALRFS in our centre

MATERIALS AND METHODS

This was a retrospective case note review. All cases undergoing ALRFS from July 2016-November 2019 were included. Surgery was performed by two surgeons. Decision for surgery was agreed upon at multidisciplinary team meeting. Surgical procedure followed the described "sling on a string technique". This involved rectus sheath harvest of 6-8cm by a suprapubic incision and then mounting at both ends with absorbable polyfilament suture to form a string. Rectus sheath incision was then closed. The string then inserted retropubically via a mid-urethral incision and dissection. Exit point of trocar was through abdominal incision. Cystoscopy checks done bilaterally and sling suture ends tied over rectus fascial aponeurosis tension free. Abdomen incision then closed. All patients were followed up at 3 month period. Baseline, intra and post-operative data was collected and analysed using Microsoft Excel 2007.

RESULTS

A total of 31 patients were included. All patients underwent urodynamic assessment prior to decision for ALRFS. Urodynamic stress incontinence was identified in all patients except one who subsequently had positive pad test. Median preoperative ICIQ-UI score was 15 (range 6-21). ALRFS was primary procedure in 27 patients (87%) while two patients had previous urethral bulking agent failure, one had previous synthetic mid-urethral sling failure and one patient had sling and bulking agent failure. Median age of patients in years was 49 (range 27-79) and median BMI was 26.7 kg/m^2 (range 21.2-35.8). Median parity was 2 (range 0-5). Twenty-one patients (67.7%) presented with mixed urinary incontinence symptoms while ten (32.3%) had pure stress incontinence. Concurrent pelvic floor repair was undertaken in 9 patients (29%). Two patients (6.4%) had bladder perforation on trocar entry diagnosed intraoperatively on cystoscopy. Median estimated blood loss was 100ml (range 50-200). No other intra-operative complications were seen in the cohort and none of the patients had any significant abdominal wound complications. Stress incontinence was completely cured in 26 (83.9%) and significantly improved in 5 (16.1%). Median postoperative ICIQ-UI score was 0 (range 0-13). Seven patients (22.5%) had voiding dysfunction postoperatively and three required intermittent self catheterization. Three patients (9.6%) had de novo overactive bladder (OAB) symptoms in postoperative period. Persistent OAB symptoms were found in 5 (16.1%) patients.

INTERPRETATION OF RESULTS

Short term success rate of ALRFS is 100% in our cohort

CONCLUSIONS:

Preliminary data suggests promising results and low complication rates with ALRFS for SUI. Longer term follow-up is necessary for audit and quality improvement.

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18_ep - THE IMPACT OF SURGICAL PROLAPSE REPAIR VIA SACROSPINOUS LIGAMENT FIXATION ON GENITAL HIATUS

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1. INTRODUCTION:

Female pelvic organ prolapse (POP) refers to herniation of the pelvic organs through the vaginal walls. Its aetiology is multifactorial and includes anatomical defects but also physiological, genetic or lifestyle factors [1].

It has been described that 40% of the population between 45-85 years old have an objectifiable genital prolapse, but only 12% of these women are symptomatic [2].
The incidence of prolapse surgery is 1.5 interventions per 1000 women-years [3]. A high recurrence rate of prolapse after primary surgery has been reported: 50% of objective recurrences, however, just a 3-6% are symptomatic [4].
Some risk factors that have been related to recurrence of prolapse are BMI, early age of onset of prolapse, avulsion of levator ani muscle or an enlarged urogenital hiatus area [5].

To minimize the high recurrence rate, vaginal meshes were introduced for correction of prolapse. However, complications derived from this technique were described and finally in 2011, the FDA positioned itself against vaginal mesh placement in primary prolapse surgery [6].

Considering that abdominal meshes did not involve the complications previously described for vaginal meshes, which had already given very good results for the correction of prolapse, urogynecologist surgeons started to treat not only vaginal vault prolapses, but also began to perform subtotal hysterectomies with suspension of the cervix to the promontory of the sacrum with very good results [7].

In the present study we would like to investigate how laparoscopic sacrospinous mesh fixation reduces prolapse recurrence: could it reduce the area of the urogenital hiatus?

2. HYPOTHESES AND OBJECTIVES:

Hypothesis:
Fixation of the sacrospinous mesh to the levator ani muscle, using the laparoscopic approach described by Wattiez et. al, reduces the area of the urogenital hiatus.

Objectives:
To establish whether the urogenital hiatus, measured by pelvic floor ultrasound, is reduced in patients undergoing laparoscopic surgery for pelvic organ prolapse, by laparoscopic sacrospinous mesh fixation (sacrocolpopexy, hysteropexy or cervicopexy).

3. MATERIAL AND METHODS:

This is a retrospective study whichs includes all patients operated on in the last 5 years in our hospital using laparoscopic sacrospinous mesh fixation.

The sacropexies in our center have the following indications:
-Young patients (<55a) with levator ani avulsion and apical prolapse POP-Q stage> III
-Vaginal vault prolapses

Variables of study:

-Epidemiological: age, weight, ethnicity, parity, and history of instrumented delivery.
-Clinical: degree of prolapse before surgery and avulsion of the levator ani muscle.
-Ultrasound: area of the urogenital hiatus before the intervention and after the surgery.

-Monitoring response: clinical prolapse recurrence rate.

An initial descriptive analysis of the population of our study and a comparative analysis of the area of the urogenital hiatus before and after surgery was performed using the STATA15.1 software (1985-2017 StataCorp LLC, Texas).

4. RESULTS:

A total of 22 patients were included in the study.

The epidemiological characteristics of the sample are summarized in Table 1:

Table 1:

VARIABLE	*(Mean ± SD) (%)*
*Age**	48,16 (±9,86) years
*BMI**	24,07 (± 2,62) kg/m2
*Raza***	95,45% Caucasian; 4,55% Maghrebi
*Number of vaginal deliveries**	2,27 (± 1,03)
*History of instrumented delivery***	45,45%
*Degree of prolapse before surgery **	40,91% IV, 59,09% III
*Levator ani avulsion rate***	77,27%
Recurrence rate	9,09%

* Quantitative variables are expressed as the mean and standard deviation.
** Qualitative variables are expressed as a percentage.

The comparative analysis of the urogenital hiatus area before and after surgery is described in Table 2:

Table 2:

	MEAN	**IC – 95%**	
Urogenital hiatus area before surgery	37,49 cm2	(34,23 – 40,75 cm2)	
Urogenital hiatus area after surgery	34,00 cm2	(30,55 – 37,46 cm2)	
Difference	3,49 cm2	(-1,13 – 8,10 cm2)	p = 0,0673*

* The comparison of means has been analysed using the T-Student test for homogeneous variances (after applying the Saphiro Wilk test that confirmed the normality of the distributions and the F Snedecor test that confirmed the homogeneity of the variances).

5. CONCLUSION

The urogenital hiatus area does not change with laparoscopic sacrospinous mesh fixation for prolapse surgery.

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19_ep - RETROSPECTIVE ANALYSIS OF MESH COMPLICATION CASES: IS PARTIAL OR COMPLETE REMOVAL BETTER?

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INTRODUCTION AND AIM OF THE STUDY

The issues surrounding the use of mesh for vaginal prolapse and stress urinary incontinence continue as highlighted by the latest Cumberlege report. The pause on the use of mesh remains and the UK now has designated mesh removal centres. In our large tertiary urogynaecology centre we see and assess numerous patients with possible mesh complications. We present the results of our experience here.

The aim of this study is to perform a retrospective review of all mesh complication cases referred to our unit, in particular assessing those that underwent complete versus partial removal.

MATERIALS AND METHODS

All cases of women referred for mesh complications were reviewed from 2017 to present. Data was collected on clinical findings, investigations, surgical findings, and post intervention outcomes.

RESULTS

A total of 30 cases were referred with a possible mesh complication. Of these 19 patients underwent further investigation and 14 had surgical intervention. The mean age of the group was 65yrs (range 35-82yrs) and mean parity was 2 (range 1-6).

In their past medical history, 5 women had back pain and 2 women had chronic pain. Prior to the index mesh procedure, 8 women had undergone previous non mesh prolapse surgery, 3 women had undergone continence surgery (2 colposuspensions, 1 TVT-removed and resited) and 9 women had undergone previous abdominal surgery. 10 of the procedures were done at our unit and 9 were done elsewhere.

More than half (16/19) presented with mesh erosion, 9 from the TVT group and 5 from the sacrocolpopexy group. Other presentations included bladder pain, incontinence, overactive bladder, pain and dyspareunia, vaginal discharge, and recurrent urinary tract infection. Years to presentation is shown in table 1. Type of mesh inserted, and final diagnoses are shown in table 2.

Table 1: time from insertion to presentation of mesh complication

Years to presentation	Number
1.5	1
2	1
3	2
5	2
6	1
8	3
10	3
11	2
14	3
19	1

Table 2: type of mesh insertion

Type of mesh	Number	Final diagnoses
TVT	13	OAB Recurrent UTI Mesh erosion Infection Pain Fistula
SCP	5	Mesh erosion Pain Rec vaginal bleeding
POP MESH	1	Mesh erosion

31% of patients underwent imaging, 68% underwent examination under anaesthetic, 80% underwent cystoscopy. 10% of women were referred to the pain team, no women were referred for gastroenterology or colorectal opinion. All cases were discussed at the MDT.

12 patients underwent partial mesh removal of which 9 had tissue patch covering. 1 patient underwent complete mesh removal (TVT). Post removal she was awaiting peri-urethral bulking for USI recurrence. 1 patient had excision of granulation tissue. In those with partial TVT removal ongoing symptoms included overactive bladder, vaginal soreness, and recurrence of stress urinary incontinence.

INTERPRETATION OF RESULTS

This retrospective case review highlights the variety that can be seen in mesh complication cases. Thorough investigation and pre-operative counselling are paramount to ensure patients fully understand that complete mesh excision may not always be feasible if there is a concern about damage to other structures. Nonresolution of symptoms, further surgery, ongoing and even new pain may be an outcome despite surgical intervention.

CONCLUSIONS

These cases will continue to present to our clinical practice even 10 to 20 years post insertion and reinforce the need for designated mesh removal centres in the UK.

20_ep - SELF-SACRAL NEUROMODULATION ON DEMAND FOR URINARY RETENTION THERAPY

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INTRODUCTION AND AIM OF THE STUDY

Urinary retention without an identifiable urological cause is a diagnostic and therapeutic challenge. Patients with chronic non-obstructive urinary retention are usually treated conservatively by relying on intermittent self-catheterization or permanent catheters, which significantly affect the quality of life. In selected patients with chronic non-obstructive urinary retention, sacral neuromodulation (SNM) offers an important therapeutic alternative, improving significantly the quality of life. Neuromodulation is based on chronic nerve root stimulation. The purpose of our work is to evaluate the self-managed stimulation of the patient who turns on the pulse generator 15 - 20 minutes before each urination, self-stimulating according his own needs.

MATERIALS AND METHODS

The authors do not evaluate in this paper all their patients who underwent NMS therapy treated for urine retention and who continue to benefit from the treatment. Patients who have undergone sacral neuromodulation implant since January 2018 and December 2019 are evaluated. In 8 patients suffering from non-obstructive urinary retention who performed clean self-catheterization, 3 patients underwent only a first-time intervention and were not considered suitable for the definitive implant due to a lack of response to the urination recovery. The other 5 patients were permanently implanted with NMS because they were found suitable. Of the latter 5 patients: 3 patients (2 women and 1 man) underwent bilateral caudal epidural neuromodulation (bilateral ottopolar electrodes are placed in the caudal epidural space in a anterograde approach) and 2 patients (2 women) underwent sacral neuromodulation with insertion in the unilateral sacral foramen S3 of the quadripolar electrode. The pre-operative neuro-urological work up includes: MRI of the brain and marrow, urination diary, complete urodynamic examination, urine examination and ultrasound of the urinary tract negative for pathologies worthy of note. These patients had the proprioceptive sensitivity preserved to the filling and did not show high detrusor compliance. The post-operative follow-up work up includes weekly checks for the first 30 days then quarterly with compilation of the urination diary, uroflowmetry and evaluation of the postvoid residual volume. All 5 patients performed clean bladder self-catheterization 4 to 6 times a day before the neuromodulator implantation. After the definitive implantation, they were trained and equipped with a remote control that allows them to self-stimulate by turning the pulse generator on and off, offering them self-management in the sacral stimulation mode. The originality of this work was the stimulation mode which does not provide for continuous 24-hour stimulation but a stimulation that the patient himself manages and that starts 15-20 minutes before each urination.

RESULTS

Our 5 patients aged between 23 and 67 (4 women and 1 man) turn on the pulse generator 15-20 minutes before urination and turn it off after urination is complete. All these patients in a follow-up that varies from 24 to 3 months show a satisfactory urination recovery with 4 patients who abandoned bladder self-catheterization due to the absence of significant postvoid residual volume and one patient who significantly reduced the use of self-catheterization which continue to perform it occasionally for a postvoid residual volume that does not exceed 150 ml.

INTERPRETATION OF RESULTS

We do not evaluate the difference in stimulation between the epidural technique and the peripheral neuromodulation technique at the level of S3, neither do we evaluate what may be the predictive or exclusion factors to treatment. We have noticed in our experience that patients undergoing neurostimulation for the resolution of urinary retention benefit from chronic stimulation but, in the same way, they can benefit from a self-managed stimulation that certainly offers less discomfort to the patient and a saving of battery energy that we think can certainly have a considerably prolonged validity over time. In our center, if unilateral SNM with quadripolar electrode does not offer the desired results, in some cases we have performed a bilateral test. Another therapeutic option after SNM failure is bilateral caudal epidural neuromodulation. The basic theory of this procedure is not only to bilaterally stimulate the sacral roots at the level of S3, but also at the level of S2 and S4, since these are also involved in the lower urinary tract and in the function of the pelvic floor. This approach recruits multiple neural pathways and increases therapeutic efficacy.

CONCLUSIONS

Sacral nerve stimulation is effective for restoring emptying in patients with retention refractory to other forms of treatment. Offering the possibility to stimulate innervation only when it is necessary to urinate seems to us to be a good alternative to continuous stimulation throughout life. Sacral neuromodulation in on demand mode can certainly be accepted more by the patient, reduces neuroplasticity which negatively affects the validity of the treatment over time and prolongs the exhaustion time of the pulse generator.

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21_ep - VAGINAL HYSTERECTOMY WITH PELVIC FLOOR REPAIR UNDER LOCAL ANESTHESIA. RESULTS OF A PILOT STUDY

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INTRODUCTION AND AIM OF THE STUDY

Vaginal hysterectomy (VH) for the surgical management of pelvic organ prolapse (POP) is usually performed under either general or regional anesthesia. Aim of this study is to evaluate the feasibility and safety of performing VH under local anesthesia.

MATERIALS AND METHODS

This was a case-control study of women with advanced POP who underwent a VH. The "standard care" group consisted of 20 patients who underwent VH under a combined spinal-epidural block, whereas the "local anesthesia" group consisted of 20 patients who underwent VH under local anesthesia and i.v. sedation.

RESULTS

The median pain intensity at rest and the number of women with moderate/severe pain was significantly lower in the "local anesthesia" group (table 1). The percentage of participants needing opioids was also statistically significant lower for the "local anesthesia" group (table 2). Furthermore, patients of the "local anesthesia" group had significantly shorter time to first mobilization, shorter duration of postoperative hospitalization and reported higher levels of satisfaction.

CONCLUSIONS

Local anesthesia for patients undergoing VH and PFR has been shown to be a viable alternative to regional anesthesia offering reduced postoperative pain, less opioid use, shorter duration of postoperative hospitalization and higher patient satisfaction.

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Table 1. Primary outcomes of the two groups at the early postoperative period.

-	Local anesthesia (N=20; 50.0%)	Standard care (N=20; 50.0%)	Effect size[a]	P[b]
Pain at rest				
2h				
Median (IQR)	0 (0 - 1)	1.9 (0.7 - 4.8)	0.28	**0.001**
Moderate/ Severe	3 (15.0)	7 (35.0)	OR 0.33 (95% CI: 0.07 to 1.52)	0.154
4h				
Median (IQR)	0 (0 - 2)	4.1 (2.4 - 5.3)	0.36	**<0.001**
Moderate/ Severe	3 (15.0)	11 (61.1)	OR 0.11 (95% CI: 0.02 to 0.53)	**0.006**
8h				
Median (IQR)	1 (0 - 4)	2.7 (1.5 - 4.8)	0.15	**0.013**
Moderate/ Severe	6 (30.0)	8 (40.0)	OR 0.51 (95% CI: 0.17 to 2.38)	0.508
24h				
Median (IQR)	0 (0 - 1.5)	0.6 (0.4 - 1.3)	0.06	0.132
Moderate/ Severe	1 (5.0)	1 (5.0)	OR 1.00 (95% CI: 0.06 to 17.18)	1.000
Pain during cough				
2h				
Median (IQR)	0 (0 - 2)	3.1 (0.8 - 5.1)	0.24	**0.002**
Moderate/ Severe	4 (20.0)	8 (44.4)	OR 0.31 (95% CI: 0.07 to 1.32)	0.113
4h				
Median (IQR)	0 (0 - 2)	4.1 (2.7 - 5.7)	0.32	**<0.001**
Moderate/ Severe	4 (20.0)	12 (66.7)	OR 0.13 (95% CI: 0.03 to 0.54)	**0.006**
8h				
Median (IQR)	2 (0 - 5)	3.9 (1.3 - 5.5)	0.09	0.056
Moderate/ Severe	7 (35.0)	10 (52.6)	OR 0.49 (95% CI: 0.13 to 1.75)	0.270
24h				
Median (IQR)	1 (0 - 2)	1.2 (0.4 - 2.3)	0.02	0.422
Moderate/ Severe	2 (10.0)	1 (5.0)	OR 2.11 (95% CI: 0.18 to 25.35)	0.556

[a]Cohen's d

[b]Comparisons of continuous outcomes were performed using Mann–Whitney U-test.

Note. OR: Odds Ratio 95%CI: 95% Confidence Interval

Table 2. Secondary outcomes of the two groups at the early postoperative period.

	Local anaesthesia (N=20; 50.0%)	Standard care (N=20; 50.0%)	Effect size[a]	P[b]
Use of opioids	Tramadol 100mg	Morphine		
Total	7 (35.0)	19 (95.0)	OR 0.03 (95% CI: 0.01 to 0.26)	**0.002**
2h	0 (0.0)	16 (80.0)	*	**<0.001**
4h	1 (5.0)	16 (80.0)	OR 0.01 (95% CI: 0.00 to 0.13)	**<0.001**
8h	3 (15.0)	15 (75.0)	OR 0.06 (95% CI: 0.01 to 0.29)	**<0.001**
24h	3 (15.0)	10 (50.0)	OR 0.18 (95% CI: 0.04 to 0.80)	0.024
Sedation				
2h				
Median (IQR)	5 (3 - 5)	1 (0 - 4)	0.19	**0.006**
Moderate/ Severe	14 (70.0)	5 (25.0)	OR 7.00 (95% CI: 1.74 to 28.17)	**0.006**
4h				
Median (IQR)	3 (1 - 4.5)	2 (0.5 - 5.5)	0.00	0.967
Moderate/ Severe	9 (45.0)	9 (45.0)	OR 1.00 (95% CI: 0.29 to 3.48)	>0.999
8h				
Median (IQR)	2 (1 - 3)	3.5 (0.5 - 7)	0.07	0.095
Moderate/ Severe	1 (5.0)	10 (50.0)	OR 0.05 (95% CI: 0.01 to 0.47)	**0.009**
24h				
Median (IQR)	0.5 (0 - 1)	0 (0 - 4)	0.01	0.576
Moderate/ Severe	0 (0.0)	5 (25.0)	*	0.047
Nausea				
2h	1 (5.0)	4 (20.0)	OR 0.21 (95% CI: 0.02 to 2.08)	0.182
4h	1 (5.0)	3 (15.0)	OR 0.30 (95% CI: 0.03 to 3.15)	0.314
8h	0 (0.0)	6 (30.0)	*	**0.020**
24h	1 (5.0)	0 (0.0)	*	>0.999
Vomiting				
2h	0 (0.0)	2 (10.0)	*	0.487
4h	0 (0.0)	2 (10.0)	*	0.487
8h	0 (0.0)	3 (15.0)	*	0.231
24h	1 (5.0)	1 (5.0)	OR 1.00 (95% CI: 0.06 to 17.18)	>0.999

[a]Cohen's d [b]Comparisons of continuous outcomes were performed using Mann–Whitney U-test; *OR could not be calculated because of o distribution and comparison were made using Fisher's exact test

Note. OR: Odds Ratio 95%CI: 95% Confidence Interval

22_ep - LIFE ON HIPREX. HOW ARE YOU NOW?

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INTRODUCTION AND AIM OF THE STUDY

Urinary tract infections (UTIs) are the most common outpatient infection, with a lifetime incidence of 50-60% in adult women (1). UTIs are arguably one of the most important causes of morbidity and health care spending with approximately 1.6 billion dollars being spent annually. Recurrent UTIs (rUTIs) occur in 3% of women, this equates to over 300,000 affected adult women annually in the UK (2). Management of rUTI remains a challenge. Extended courses of low-dose antibiotic therapy is the current standard of care for the prevention of rUTI, Empirical, indiscrete, prolonged or incorrect use of antimicrobials contribute significantly to the development of resistant strains in the urinary tract. This underlines the need for alternative non-microbial treatments. Methenamine Hippurate (Hiprex) is a non-antibiotic agent used for the prevention of UTIs. It has antibacterial activity as the methenamine component is hydrolysed to formaldehyde which acts to keep the urine acidic. A meta-analysis of 13 mixed quality studies reported that the overall rate of adverse effects was low but was poorly described(3) .

The aim of this study is to determine patient satisfaction, efficacy and side-effects of Hiprex in long-term users

MATERIALS AND METHODS

All patients attending urogynaecology clinic known to have taken Hiprex were given a questionnaire to determine satisfaction, reason for discontinuation, side-effects and efficacy of Hiprex. Data were analysed using IBM SPSS (version 25).

RESULTS

We received 60 questionnaires; the mean age of respondents was 59.7 years (age range 26 – 82). Average duration time on Hiprex was 32 months. Menopausal status: 72% post-menopausal and 28% pre-menopausal. 72.5% were currently taking Hiprex with 5% having discontinued treatment due to side-effects. The mean incidence of treated UTIs prior to treatment with Hiprex was 7 this decreased to 3 infections annually. Overall, 71% of respondents had improvement in frequency of UTIs and preferred Hiprex to daily antibiotics. Over 60% of participants were reluctant to discontinue treatment due to fears that UTIs will return.

INTERPRETATION OF RESULTS

The overall side-effect profile was low and the majority of those who reported adverse effects, felt that these were minor and did not warrant discontinuation of treatment. Patient satisfaction was high, and treatment with Hiprex was preferred to prolonged courses of antibiotics.

CONCLUSIONS

This study reviewed treatment satisfaction of long-term Hiprex users. It supports previous meta-analysis which concluded that Hiprex is effective in reducing the incidence of UTIs. The incidence of UTIs reduced by over half in Hiprex users. This study has identified that Hiprex is safe and effective in long-term users.

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23_ep - THE USUAL SUSPECT: FUNDAL PRESSURE AT SECOND STAGE OF DELIVERY ASSOCIATED WITH PELVIC FLOOR DAMAGE

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INTRODUCTION AND AIM OF THE STUDY

Uterine fundal pressure (the Kristeller maneuver) is applied to accelerate the birth of the head by increasing the expulsive force of the uterus in the second stage of delivery (1). Due to the complications and the lack of reliable records, there is not enough evidence about the benefits and reliability of the maneuver (2). In recent years, the debate about the avoidable risk factors of labor for pelvic floor damage has increased. Therefore, the goal of our study was to evaluate the effect of using uterine fundal pressure during the second stage of delivery on the rate of LAM defects among primiparous women using 3D-TPU.

MATERIALS AND METHODS

A total of 86 women who had their first vaginal birth were included in the present case-control study. The women were divided into two groups: the fundal pressure group included women where the fundal pressure maneuver was applied (n=39); and the control group included women who delivered spontaneously without fundal pressure (n=47). 3D-TPU was performed within 48 h of delivery and LAM biometry, LAM defect and loss of tenting were determined.

RESULTS

Anteroposterior hiatal dimensions on resting, maximal Valsalva and maximal PFMC were found to be higher in the fundal pressure group ($p < 0.0001$, $p=0.008$, $p=0.007$, respectively). The mean hiatal area at rest was larger in the fundal pressure group than the control group ($p=0.04$). The rate of LAM defect was significantly higher in the fundal pressure group ($p=0.001$). The rate for loss of tenting was significantly higher in the fundal pressure group ($p<0.0001$). According to multivariate regression models the fundal pressure was the only independent factor associated with LAM defect (OR = 5.63; 95% CI = 12.01–15.74) and loss of tenting (OR = 8.74; 95% CI = 2.89–26.43).

INTERPRETATION OF RESULTS

The findings of the present study suggest that the ratio of LAM defect, bilateral LAM defect and loss of tenting was significantly higher for the fundal pressure group. Fundal pressure is an independent risk factor for LAM defect and loss of tenting. Additionally, women in the fundal pressure group reported significantly higher mean anteroposterior hiatal diameters during rest, Valsalva and PFMC.

CONCLUSIONS

In light of our results, we concluded that fundal pressure during the second stage of delivery is associated with a higher risk of LAM trauma and a larger genital hiatus. This may eventuate with anterior or multicompartmant vaginal wall prolapse.

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FIGURES

Figure 1: Bilateral loss of tenting. Dotted white lines indicate loss of tent appearance. Dotted yellow lines indicate actual ventrolateral vaginal sulci line

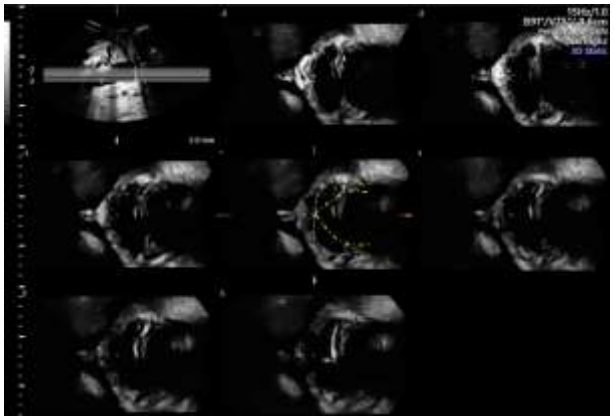
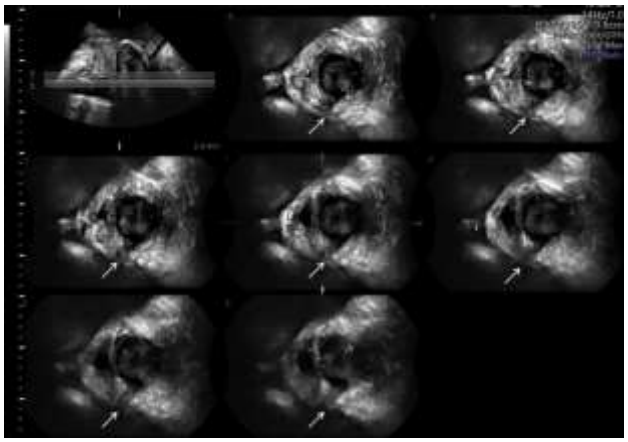


Figure 2: Right sided levator defect. White arrow shows levator defect.



24_ep - PERCUTANEOUS TIBIAL NERVE STIMULATION IN THE TREATMENT OF REFRACTORY OVERACTIVE BLADDER

SYNDROME AND FECAL INCONTINENCE: A PROSPECTIVE STUDY

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INTRODUCTION AND AIM OF THE STUDY

The etiology of idiopathic over active bladder (OAB), the prevalence and incidence of this disease is still not fully assessed. The symptoms of frequency urge with or without incontinence and nocturia can be debilitating and can have a significant impact on quality of life.

The primary therapies of OAB include bladder retraining and uro-therapeutical intervention including drinking assessments. Secondary treatment options are based on pharmaceutical drug therapies seither with anticholinergic agents or a selective beta-3 adrenoreceptor agonist . Due to severe side effects as dry mouth, constipation or cognitive impairment the women`s compliance is rather low.

With contraindication to second line pharmaceutical treatment options classify for the intravesical botulinum A. toxin injection or percutaneous tibial nerve stimulation (PTNS) .

MATERIALS AND METHODS

The aim of this study was to investigate the effectiveness of percutaneous posterior tibial nerve stimulation (PTNS) in women with refractory OAB. PTNS was applied weekly for 12 weeks followed by TTNS at home 3 times per week. Subjective success rate was evaluated utilizing the German female pelvic floor questionnaire, the visual analogue scale and the miction protocol pre – and post intervention, Demographics, comorbidities and urodynamic parameters were recorded.

RESULTS

21 patients were included with a mean age of 64 ± 16.5 years and BMI of 30 Kg/m2 (25%). There was a significant improvements pre/post therapy (P. value < 0.001 and Cohen`s d estimate 0.74), for patients who do not respond to OAB medication therapy.

INTERPRETATION OF RESULTS

PTNS is an effective technique for the treatment of OAB. No major complications have been reported.There was a statistically significant improvement OAB symptoms and Quality of life after treatment.

CONCLUSIONS

This prospective cohort study demonstrates that that PTNS is an effective treatment in women with refractory OAB with excellent durability if TTNS was continued.

25_ep - SHORT-TERM OUTCOMES OF BULKAMID URETHRAL BULKING AS BOTH FIRST LINE THERAPY AND IN PATIENTS WITH PREVIOUSLY FAILED CONTINENCE SURGERY

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INTRODUCTION AND AIM OF THE STUDY

The public concern regarding the use of mesh procedures to treat stress urinary incontinence (SUI) has limited the surgical management options available. For patients in whom conservative measures have failed, the surgical options are limited to the more invasive procedures of either open or laparoscopic colposuspension or autologous fascial sling. An alternative option of intramural bulking agents, as a less invasive procedure, is recommended by NICE if a patient decline major surgery. However, it is suggests that it is less effective than the above invasive surgical procedures.

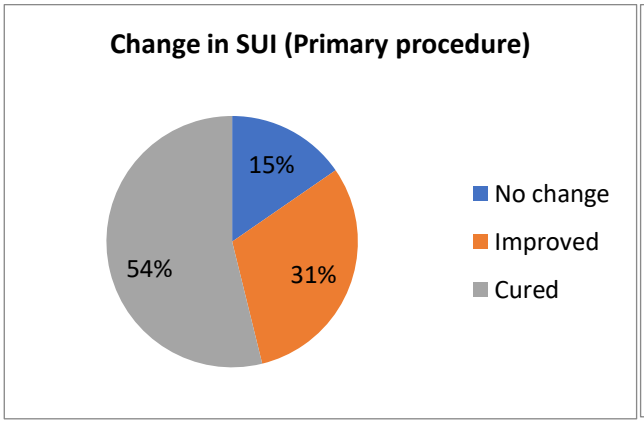
This study aims to assess the short-term outcome of the Bulkamid Urethral Bulking procedure in managing patients with SUI both as first line therapy and in those with previously failed continence surgery.

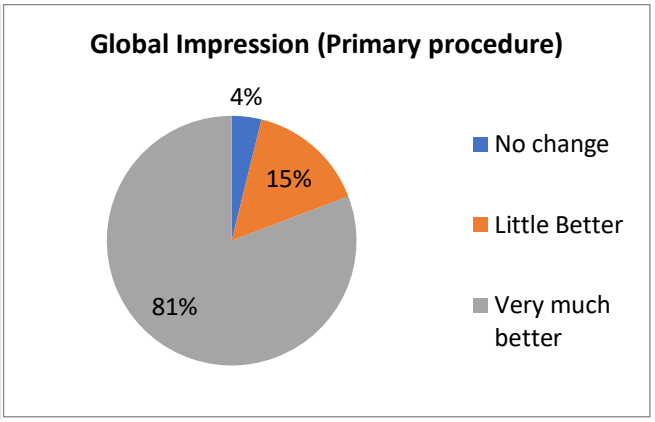
MATERIALS AND METHODS

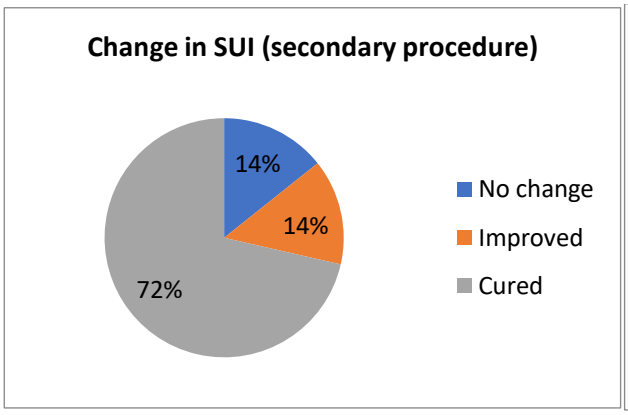
Data was collected prospectively using ICIQ-UI and ICIQ-OAB on patients undergoing the Bulkamid urethral bulking procedure from 2019 – 2020. Details regarding follow-up interval, change in symptoms of SUI and global impression of improvement in symptoms and complications were obtained.

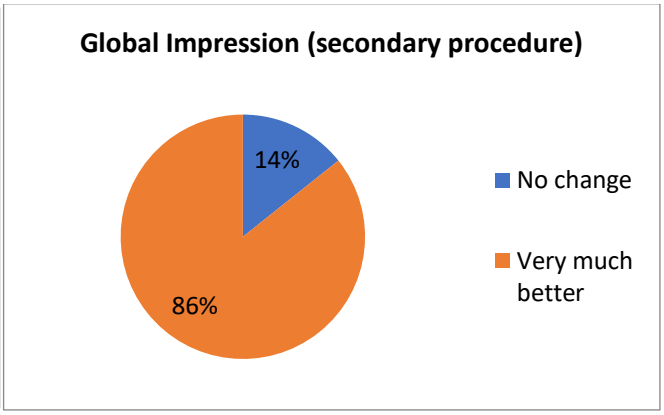
RESULTS

Data from 33 episodes were analysed. 26 patients had Bulkamid urethral bulking as the primary continence surgical procedure and 7 patients having had previous continence surgery (Macroplastique, TOT, TVT, Colposuspension). 76% of patients were followed-up via face to face consultation and the remaining contacted by telephone. 73% of patients were contacted 6 weeks post procedure; with 24% contacted 3 months and the remaining 3% at 6 months post procedure. Average follow up is 8 weeks.









No patients had any complications as a result of the procedure at the time of follow-up.

INTERPRETATION OF RESULTS

For all women undergoing Bulkamid injection, 93% of patients report an improvement in SUI symptoms with 63% reporting being completely dry.

The success rate of Bulkamid urethral bulking as primary therapy is 85% with 54% of patients reporting cured from their symptoms. Of the 15% reporting no change in SUI symptoms, only 4% felt there was no change when it came to the global impression of their symptoms. No patients reported worsening of symptoms.

Bulkamid used as a secondary therapy resulted in 6 patients reporting an improvement in their SUI symptoms with 5 completely dry. All patients with an improvement in symptoms reported that symptoms were very much better in terms of their global impression.

CONCLUSIONS

The short term results from Bulkamid Urethral bulking Injections suggests that it is effective in managing SUI both as a first line treatment option and for those patients who have undergone previous continence surgery. It is important that the success rates and low complication rates of the procedure are shared with patients as part of the patient decision aid for SUI surgery in order for patients to make a fully informed choice about their management.

There is need for long-term data specifically on Bulkamid injection.

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26_ep - OBESITY AND URINARY SYMPTOMS AFTER TENSION-FREE VAGINAL TAPE (TVT) PROCEDURE: LONG OUTCOME AFTER SURGICAL INTERVENTION— QUESTIONNAIRE STUDY

Yair Daykan [(1)] ***- Or Eliner*** [(1)] ***- Ron Schonman*** [(1)] ***- Rina Tamir Yaniv*** [(1)] ***- Shir Belkin*** [(1)] ***- Rachel Ribak*** [(1)] ***- Nissim Arbib*** [(1)] ***- Zvi Klein*** [(1)]

Meir Medical Center, Department of OBGYN, Kfar Saba, Israel; Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel, Kfar Saba, Israel [(1)]

INTRODUCTION AND AIM OF THE STUDY

Stress urinary incontinence (SUI) is a common and worldwide problem. To date, Tension-free vaginal tape (TVT) procedure is the leading surgical treatment for SUI. Evaluating whether a woman with SUI is an appropriate candidate for TVT is obligatory prior to this procedure. Obesity is one of the majors known risk factors for recurrent symptoms after TVT procedure. This study assessed the long-term recurrence rate of urinary symptoms complain among obese (BMI≥30) women after TVT surgery.

MATERIALS AND METHODS

We conducted a retrospective case control study. During March 2014 to January 2020 we identified 265 patient who had undergone TVT surgery for SUI. 107(40.6%) Obese patients (defined as BMI greater than or equal to 30 kg/m2) were paired with 157(59.4%) nonobese patients (defined as BMI less than 30 kg/m2). The patients were follow-up using a UDP-6 and PGI-I Telephonic Questionnaires.

RESULTS

During the study period 263(89%) patients underwent TVT-O, 15(5.7%) mini-sling TVT and 12(4.5%) Retro-pubic TVT. In both groups no secondary TVT procedure were performed. There were no significant differences between the groups in terms of age, parity, smoking, previous cesarean section, hysterectomy, anterior/posterior repair, past TVT procedure and type or degree of incontinence. Diabetes Miletus was significantly more prevalent in the study group(p=.01). There was no in between groups differences in operative or post-operative complications. The follow-up range was 12 to 62 months. Women with BMIs exceeding 30 had a significantly higher incidence of post-operative urinary symptoms in UPD-6 (7.7±4.9 vs 6.1±5, p=.045) and significantly higher score in PGI-I questionnaires (2.9±1.7 vs 2.3±1.7, p=.03). Significantly more patients had stress urinary symptoms in the study group (p=.03). There were 46 subjective failures (PGI-I≥4) in all, 18 in obese and 28 in nonobese patients, giving cure rates of 83.2% and 82.2%, respectively (p=1).

INTERPRETATION OF RESULTS

Obese patients tend to have increased urinary symptoms and less satisfaction after TVT surgery.

CONCLUSIONS

Our study showed an association between overweight and long-term urinary symptoms as a correlation demonstrated by UPD-6 questionnaires. In addition, the study group had lowest satisfaction rate. We should consider informing obese patients about the increased risk for long term urinary symptoms prior to the procedure.

27_ep - COMPARISON OF SOLIFENACIN AND BILATERAL APICAL FIXATION IN THE TREATMENT OF MIXED AND URGENCY URINARY INCONTINENCE IN WOMEN: URGE 1, A RANDOMIZED CLINICAL TRIAL

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University of Cologne, Dept. Obstetrics and Gynecology, Cologne, Germany [(1)]

INTRODUCTION AND AIM OF THE STUDY

The aetiology of urgency urinary incontinence is matter of debate. Current treatment options are based on the hypothesis of a neurological disorder of bladder innervation. However, it has also been hypothesised that one main cause is the reduced function of the bladder-holding apparatus, that is, insufficient suspension of the vesico-urethral junction. This study compared the effects of surgical apical vaginal elevation with those of solifenacin on urgency urinary incontinence in women.

MATERIALS AND METHODS

Women with mixed and urgency urinary incontinence were randomised to either an established pharmacological arm (10 mg/day solifenacin) or the surgical arm (bilateral uterosacral ligament replacement, cervicosacropexy; or vaginosacropexy. Clinical and objective outcomes were assessed at 4 months after each type of intervention.

RESULTS

The study was terminated early; the cohort comprised 55 patients who were operated on and 41 who received pharmacological treatment. After surgical treatment, 23 patients (42%, 95% confidence interval=29-55%) became continent compared with four patients (10%, 95% confidence interval=1-19%) under solifenacin treatment.

INTERPRETATION OF RESULTS

Compared with pharmacological treatment, surgical repair of the apical vaginal end restored urinary continence in significantly more patients.

CONCLUSIONS

Standardized surgical replacement of both uterosacral ligaments restored urinary continence and led to disappearance of urgency symptoms.

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28_ep - RISK FACTORS FOR OBSTETRIC ANAL SPHINCTER INJURIES RECURRENCE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION AND AIM OF THE STUDY

Women with previous obstetric anal sphincter injuries (OASIs) are at higher risk to suffer from a recurrence in the subsequent pregnancy which may lead to development or worsening of anal incontinence[1,2]. It is unclear whether caesarean section is effective in preventing the development of anal incontinence in women with previous OASIs[3]. However, due to lack of evidence, few recommendations can be made about the factors that may affect the risk of OASIs recurrence. In this context, we sought to conduct a systematic review and meta-analysis to objectively evaluate potential risk factors and their impact on recurrent OASIs.

MATERIALS AND METHODS

Potentially eligible studies (up to May 2019) were identified from PubMed, Scopus, Cochrane Library and ISI Web of Science. Studies assessing the impact of risk factors on OASIs recurrence in the subsequent pregnancies were included. Reviews, letters to Editor, conference abstracts, book chapters, guidelines, Cochrane reviews, and expert opinions were excluded. Data were extracted by two independent reviewers. Odds ratio and standardized mean difference were chosen as effect measures. Pooled estimates were calculated by random-effects model.

RESULTS

The electronic database search provided a total of 3237 results. 15 studies met the inclusion criteria for a total of 697082 women. Meta-analysis showed that older women were significantly more likely to have OASIs recurrence, with a standardised mean difference of 0.31 [CI: 0.16-0.45]. Three studies showed that patients with recurrent OASIs were at greater gestational age, with a standardized mean difference of 0.11 [CI: 0.03-0.18]. Moreover, the use of oxytocin showed a positive association with recurrence of sphincter injury, with an OR of 1.48 [CI: 1.14-1.94]. Fetal head position was analysed by four studies showing an increased risk of recurrent OASIs with occiput posterior presentation, with an OR of 2.0 [CI: 1.41-2.85]. Operative delivery was considered a risk factor for anal sphincter injury, with an OR of 3.46 [CI 1.64-7.29] which remained significant for both forceps (OR=4.85; CI: 1.98-11.88) and vacuum extraction (OR=2.86; CI: 1.06-7.66) sub-groups. Also shoulder dystocia represented a risk factor for recurrent sphincter injuries, with an OR of 4.25 [CI: 3.84-4.70].

INTERPRETATION OF RESULTS

Maternal age, gestational age, occiput posterior presentation, oxytocin augmentation, operative delivery and shoulder dystocia are associated with OASIs recurrence. Episiotomy is not protective and should only be performed if clinically indicated.

CONCLUSIONS

Identified risk factors were either unmodifiable or poorly modifiable, and no protective measures were identified. Only maternal age is known antenatally and available to counsel the women about the mode of delivery. The other risk factors develop intrapartum, and very little or nothing can be done to prevent them. This confirms that proper counsel is of the utmost importance before admitting patients to vaginal delivery after OASIs, since there are no effective intrapartum measures - including prophylactic episiotomy - to reduce recurrence risk.

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29_ep - COST EFFECTIVENESS OF PELVIC ORGAN PROLAPSE AS A DAY CASE PROCEDURE

Premalatha Ulaganathan [1] - Lorraine Dinardo [1] - Mofid Ibraheim [1]

countess of chester, Countess of chester, Chester, United Kingdom [1]

Introduction: Pelvic organ prolapse is a disorder in which one or more of pelvic organs drops from its original position. It affects two thirds of women during their life time. Traditionally POP surgeries were undertaken as an elective procedure with overnight admissions. With increasing pressure in NHS, more procedures are now being done as day case.

Aim: To demonstrate that various POP procedures can be done as a day case. We also calculated the costs and savings between day case and overnight stays. To find out the effective usage of day surgery gynaecology theatres. To identify the reason for overnight admission

Method : This was retrospective audit. Case notes from January 2014 till December 2019 were collected. Data were analysed. 246 case noes were included in the review.

Results : As we said earlier 246 patients had different types of POP procedures. 97 had posterior repair ,69 of them had anterior repair, and 48 of them had both AR and PR done, and others had different type of POP procedures. 32% of our patients had POP surgeries as day case. NONE of them needed overnight admissions due to anaesthetics issues. All of our patient had been anaesthetised by senior doctors of same level of experiences. Our success rate is 96%. On an average patient stayed 8hrs postoperatively in the hospital. 9% of them needed overnight stay. Our re-admission rate was 1%. Totally we have saved £195,599 over a period of 6years and on an average we saved £32,599/year.

Conclusion: Our data showed that POP procedures can be done safely as a day case. It is not only cost effective for the NHS but it reduces infection rate, thrombosis risk and helps women to recover in a homely environment.

30_ep - 5 YEARS RESULTS OF A NOVEL SIMPLE LAPAROSCOPIC NEEDLE RETRACTOR - NEY-LIFT

Joerg Neymeyer *(1)* ***- Weinberger Sarah*** *(1)* ***- Moldovan Diana-Elena*** *(1)* ***- Gunnemann Charlotte*** *(1)* ***- Blohmer Jens-Uwe*** *(2)* ***- Schlomm Thorsten*** *(1)*

University Charité, Department of Urology, Pelvic Floor Competence Center Charité, Berlin, Germany *(1)* ***- University Charité, University Charité, Department of Gynecology, Berlin, Germany*** *(2)*

INTRODUCTION AND AIM OF THE STUDY

When operating laparoscopically the surgeon often encounters difficulties in exposing the surgical field adequately. These situations make the need for inserting a 4th or even 5th trocar inevitable in order to remove different organs and structures out of the field. Hereby we want to present an innovative technique which facilitates the necessary exposure drastically, without using additional trocars. It is the Ney Lift. The aim is to present the Ney-Lift and teach the viewer how to apply this novel technique to expose the operating site.

MATERIALS AND METHODS

From 01.2011 to 05.2020 we performed laparoscopic unilateral sacropexy by using 4 trocars (1 optic trocar, 3 working trocars) till 09.2015 by using 3 trocars (1 optic trocar, 2 working trocars, Ney-Lift) in 786 patients: 609 were performed laparoscopically with a reusable helical tunnelling device, 19 were operated with the DaVinci using standard instruments and 158 were performed laparoscopically using standard instruments. In all cases a macroporous polypropylene mesh was used. We use the Ney Lift during a laparoscopic supracervical hysterectomy/ cervicsacropexy. The pneumoperitoneum is created and we place the port in a usual manner (10 mm umbilical camera port and two 5 mm lateral trocars). The uterus, the adnexes are exposed bilaterally. In order to visualize the cervix/insertion of the uterosacral ligament / promontorium we retract the salpinx using the Ney Lift.

Equipment needed:

- *10cm or 15cm hollow needle*
- *3x0 monofil suture (without needle)*
- *cotton pieps*

We place the suture through the needle and hold both end of the suture in the dominant hand. Next we insert the needle through the abdominal wall at the level we want to retract the salpinx. Using a laparoscopical grasper we grasp the arch of the suture and pull it toward the salpinx. We place the “lasso” around the salpinx and the assistant pulls the extracorporeal ends of the suture, thus retracting the salpinx towards the abdominal wall, outside the operating field. We place a pieps on one end of the suture and make a surgical knot in order to secure the salpinx to the abdominal wall. This technique can be used to retract the intestine by placing the lasso on fatty tissue or even to retract the uterus or bowel.

RESULTS

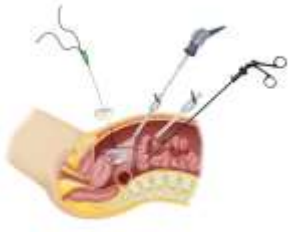
The mean laparoscopic sacrocolpopexy treatment time was 60min (range: 45-75 min) by using NEY-LIFT and only 3 Trocars (1 optic trocar, 2 working trocars). The mean laparoscopic sacrocolpopexy treatment time was 70 min (range: 45-97 min) by using 4 Trocars (1 optic trocar, 3 working trocars). The learning curve for usage of the NEY-Lift was 2 operations.

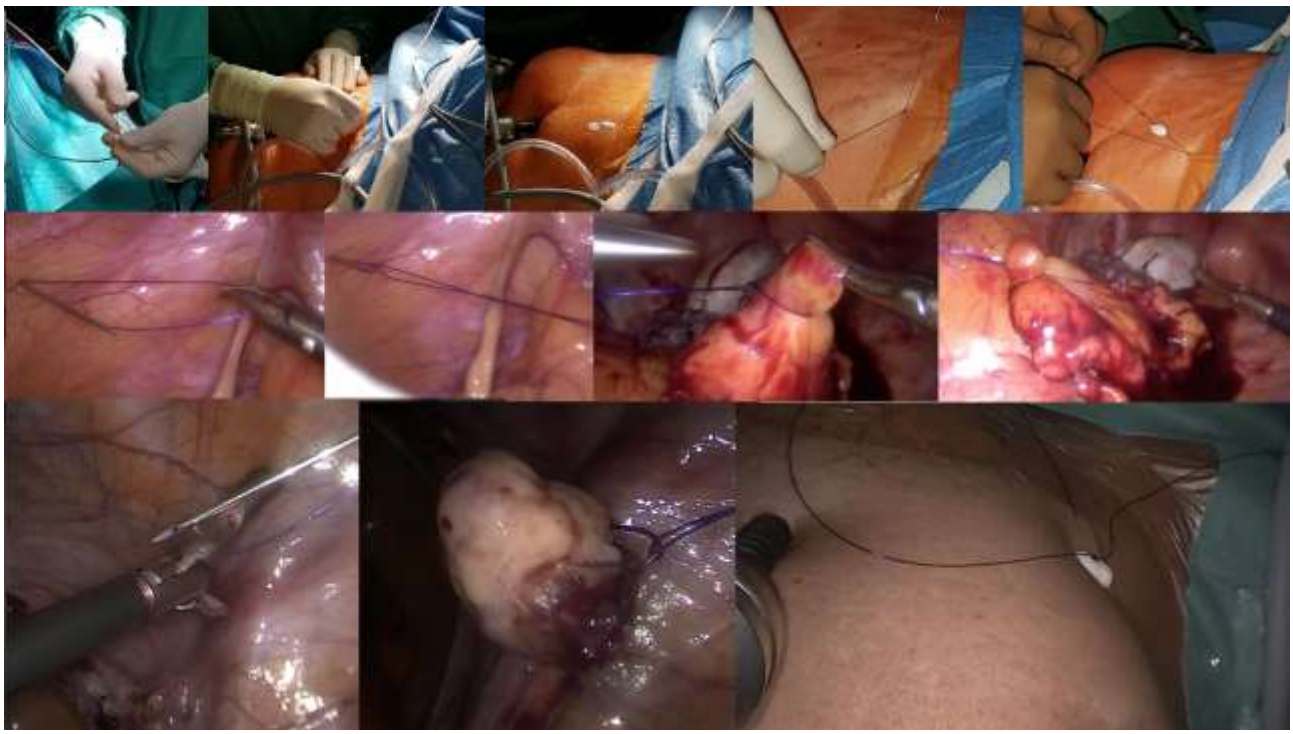
INTERPRETATION OF RESULTS

The average operation time using NEY-Lift was significantly reduced by 15min, although one trocar was used less. Due to the better visibility through the Ney-Lift and the lower number of trocars, the assistant only had to operate the camera. This optimized the surgical procedure.

CONCLUSIONS

The Ney Lift is a novel and simple way of exposing the operating site appropriately without using further trocars. It is a step towards performing an even more minimally invasive and atraumatic laparoscopic surgery and reduce the treatment-time.





31_ep - URINARY INCONTINENCE AND PERINEAL REHABILITATION: UTILITY AND BENEFITS

Rita Pulpito *(1)* ***- GIUSY FLAVIA PRUSSIANO*** *(1)* ***- ALESSANDRA DISABATO*** *(2)* ***- FILOMENA STILE*** *(3)*

P.O. "VALLE D'ITRIA", P.O. "VALLE D'ITRIA", MARTINA FRANCA, Italy *(1)* ***- ASSOCIAZIONE PRIVATA, I COLORI DELLA VITA, MARTINA FRANCA, Italia*** *(2)* ***- P.O. "VALLE D'ITRIA", P.O. "VALLE D'ITRIA", MARTINA FRANCA, Italia*** *(3)*

URINARY INCONTINENCE AND PERINEAL REHABILITATION: UTILITY AND BENEFITS

INTRODUCTION AND AIM OF THE STUDY

Perineal re-habilitation (PMF exercise) represents today an essential therapeutic approach, to address the treatment of many uro-gynecologic dysfunctions. Most important of these being urinary incontinence (UI), which affects 16% of women between 16 and 30 years old. Just a few of them are able to understand they may treat it. For all the others, a common feeling (sense) of acceptancy of this disorder predominates. For this last reason, psychiatric disorders may associate in these patients. A proper diagnostic and therapeutic approach to Perineal disfunctions is anyway possible through prevention and treatment of complex diseases, that very after affect the quality of life. Pregnancy and delivery, even if considered physiologic events, represent conditions, during which dysfunctions may take place, that may be avoided through a correct approach to the event aim of this study is the comparison, made, between women who missed a proper educational iter and others who went through it, showing the benefits.

METHODS AND MATERIALS

A descriptive survey, using a random stratified sample has been produced. The population has been divided into two omogeneous groups, based on the knowledge of the investigated phenomenon. The sample is made of 164 women, 82 of which (Group A) aged between 23 and 55 years old, who underwent through a re-habilitation pathway and 82 (control, group B) who didn't, aged between 24 – 77 years old recruited from June 2019 and February 2020. Women with good knowledge of Italian language have been recruited, after having signed an informed consent. Main selection criteria was represented by vesico-urinary dysfunction, mostly related to delivery. The questionnaire has been administered to both groups by e-mail or through appointments in the referral centers.

RESULTS

Results showed that 62.2% of the whole population were aware they might have been affected by vesico-urinary dysfunctions due to delivery. Only 42.7% underwent a prevention pathway, while 37.8% didn't. Among the most frequent causes of urethro-vesical symptoms we can see: episiotomy (52% Group A and 59.1% Group B); lacerations (56.2% Group A - 38.6% Group B), Kristeller manovre (39.2% Group A - 57.1% Group B) and suction cup application (12.2% Group A - 6% Group B). Perineal gym (PFM exercise) is the mostly prevention measure used (60.7%), 17.9% of which performed during meeting pre-delivery, perineal massage has been performed (10.7%), yoga exercise represents 7.1% and 3.6% was gym-water. Most frequent symptoms were represented by urinary incontinence (9.8% Group A – 23.5% Group B),dispareunie
(14.8% Group A- 5.9% Group B) and other symptoms as: open vulva, fecal incontinence and reduced libido (39.3% Group A- 41.2% Group B). Regarding re-habilitation pathways used by Group A, they are physiokinesitherapy in 34.5%, electrostimulation and biofeedback in 21.4%, rehabilitation through gym in 17.9%, rehabilitation through visualization 11.9% and the use of vaginal cones 2.4%. Improvement obtained rehabilitation pathway used has been: the complete resolution of symptoms in 47% of cases, improvement of symptoms in 45.5%, temporary improvement in 4.5% and no change in 3% of cases.

INTERPRETATION OF RESULTS

From data analysis it is understandable that there is awareness to experience high percentage vesico-urethral dysfunction even if prevention has been done in 42.7% of cases. Evidence of the study is that the most frequent causes, in despite of scientific evidence and recommendations about inefficacy, routine practices, as episiotomy vs lacerations or Kristeller maneuver, results still high, with high level of perineal damage. Of the 42.7% of women who practiced prevention to avoid perineal damage, they have done it through pre-delivery courses (60.7%). Other important result, comparing the two groups, in favour of prevention are the relevant differences of symptoms relieved, where 77% of women who underwent prevention, experienced less symptoms.

CONCLUSIONS

From this study we can argue that the absence of prevention expose women to high risk to experience a vesico-perineal dysfunction (73.5%). That is to say more frequently comparing to women who underwent a rehabilitation pathway. This reflects negatively on the quality of life.

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AWARENESS OF VESICO-SPHINCTER-URINARY DYSFUNCTIONS CAUSED BY CHILDBIRTH

WOMAN WHO UNDERWENT PREVENTION

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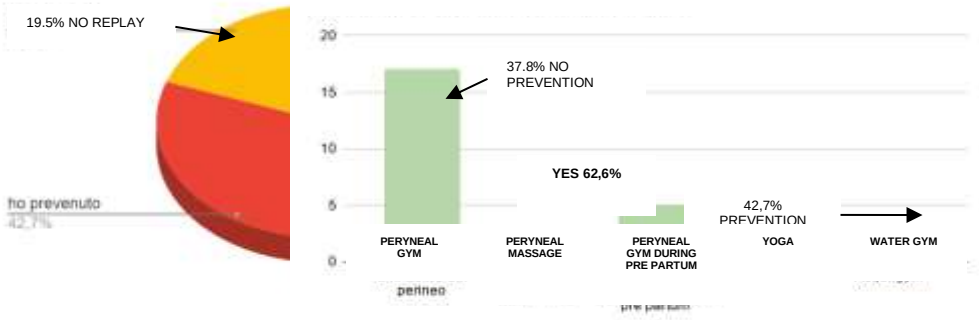

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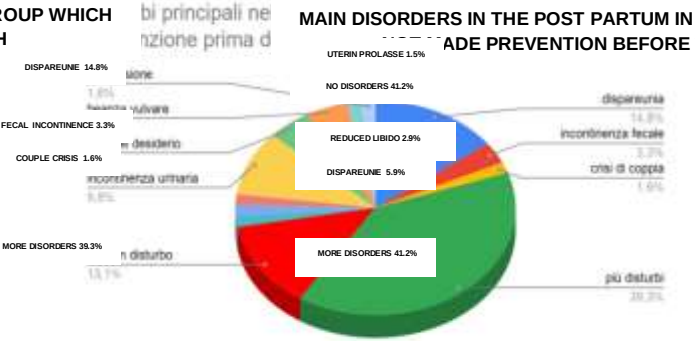

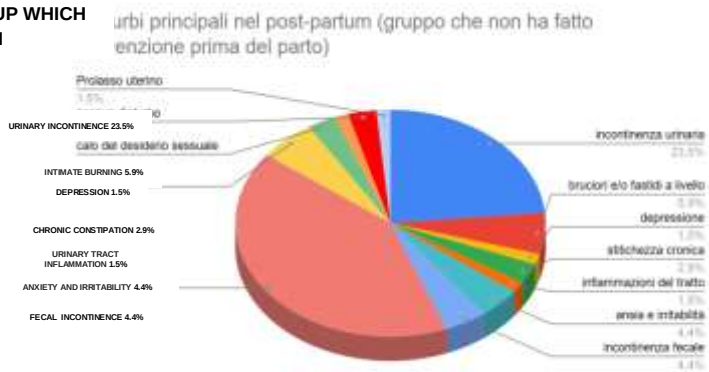

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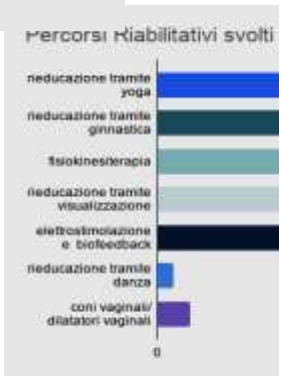

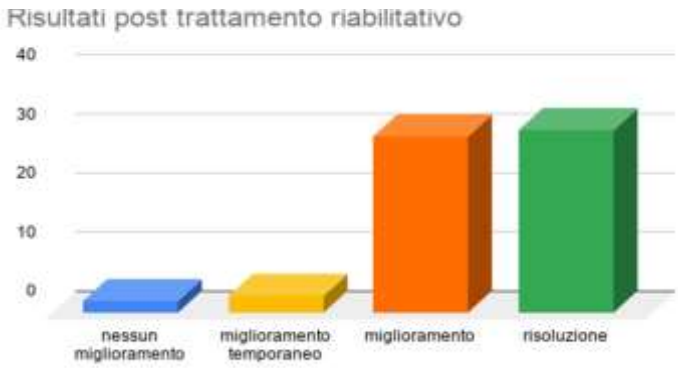

32_ep - STAFF SATISFACTION OF EPISCISSORS-60 AFTER THEIR INTRODUCTION AT A LARGE DISTRICT GENERAL HOSPITAL

Georgia Smith *(1)* ***- Claire Winchester*** *(1)* ***- Anne Downey*** *(1)*

NHS, Gloucester Royal Hospital, Gloucester, United Kingdom *(1)*

INTRODUCTION AND AIM OF THE STUDY

In January 2017, EpiScissors-60 were introduced into the Delivery Suite of our maternity department, based at a large district general hospital. EpiScissors-60 are surgical scissors designed for cutting episiotomies, with their unique feature being a guide-limb which is fixed at 60 degrees to the blades. They were introduced in order to aim to reduce the risk of OASIS occurring to patients.[1] This particular study was designed to evaluate how satisfied staff were with using EpiScissors-60.

MATERIALS AND METHODS

An online survey was created and emailed to the maternity department staff. The survey included seven questions, six of which were multiple choice and one was free-text comments. The survey was live for three months. Questions that were asked:-

1. How many times have you used EpiScissors-60?
2. How do you find EpiScissors-60 to hold?
3. How do you find the insertion of EpiScissors-60 into the vagina?
4. What angle are the EpiScissors-60 fixed at?
5. Generally, how satisfied are you with the appearance of the episiotomy after you have used EpiScissors-60?
6. Does using EpiScissors-60 increase your confidence in performing an episiotomy?
7. Would you like to make any comments about using EpiScissors-60? (free-text)

RESULTS

There were 31 responses to the survey. Almost half (48%) of staff had little experience in using EpiScissors-60, only have used them less than 5 times. Approximately a fifth (19%) of staff were accomplished users of EpiScissors-60, having used them more than 20 times. Over half of staff (52%) found the instrument ‘easy’ to hold, with only 1 staff member finding them ‘difficult’. Insertion of the scissors into the vagina proved to be ‘difficult’ or ‘very difficult’ for 6 staff members, with 25 staff members finding it ‘easy’ or ‘very easy’. Staff members reported the angle of the scissors to be 60 degrees in 65%, with 11 staff members believing it was either 30 or 45 degrees. Staff satisfaction was recorded as ‘satisfied’ in 55%, with 23% being ‘dissatisfied’ and 22% being equivocal. Confidence was increased amongst 30% of staff and not increased for 40% of staff, with the remaining 30% recording the same level of confidence. General comments about EpiScissors-60 included positive comments about the sharpness of the blades, the smoothness of the cut and that suturing was easier compared to standard scissors. Negative comments included that EpiScissors-60 produced a larger episiotomy compared to standard scissors and as a result blood loss was perceived as higher. Accouchers wanted formal training as opposed to training on-the-job, and they reported limited value for experienced staff.

INTERPRETATION OF RESULTS

This study highlighted the necessity of a formal training session for all maternity staff who may use EpiScissors-60, and this was duly implemented via the practice development team. Despite the fact that overall confidence was reported not to be improved, a parallel study

looking at perineal outcome showed that 50% more midwives were performing episiotomies which perhaps supports the notion that their confidence is improved. Regarding the negative comments about EpiScissors-60, we must remember that this instrument had very newly been introduced into the department so perhaps these comments will change in the future as the scissors get used more and become less sharp.

CONCLUSIONS

The departmental plan after this survey is to implement training and re-evaluate staff satisfaction after six months of use. We plan to cross-reference this with the parallel study looking at perineal outcome after EpiScissor-60 use.

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33_ep - SUCCESSFUL THERAPY FOR URGE INCONTINENCE WITH OZONE HIGH DOSE THERAPY (OHT).

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Introduction and aim of the study

Urge incontinence has the most unsuccessful medical treatment concept. Surgery, including botulinum toxin infiltration, usually caused the bladder function to deteriorate. Conservative medical measures showed only moderately or temporarily alleviated urinary loss and well-being.

Meanwhile, the focus went back to invasive therapies. With ozone high-dose therapy I discovered a therapy method that provides a reliable cure for primary urge incontinence as well as secondary mostly post-operative urge incontinence.

With the help of ozone high-dose therapy, an uncomplicated and successful cure of urge incontinence is given.

Material and Method

In the time between 2017-2020 I treated 11 cases of urge incontinence, 3 patients with a primary urge incontinence and 8 females with secondary post-operative urge incontinence.

Ozone high-dose therapy (OHT) means 3000 ml of ozone in a concentration of 80 µg/ ml are given in one session. 200 ml blood is taken from the arm vein 10 times. The blood is enriched with 300 ml ozone in a concentration of 80 µg/ ml, the liquid is shaken and the ozone enriched blood is re-injected into the patient during one session. OHT should be administered 10 times with weekly intervals. This method is known as the *Ten Pass* ozone high-dose therapy by Lahodny.

The cause of urge incontinence is due to the lack of energy, the partially destructed and weak bladder muscles often due to age. Through OHT a 500-fold increase in adenosine triphosphate (ATP) production results. At the same time, the stem cells which repair the bladder muscles are activated by 1000 times.

Endometriosis, polycystic ovarian syndrome, ovarian insufficiency and all inflammatory genital diseases are quickly and safely cured by OHT.

Result

A complete healing was achieved in 60 % through ozone high-dose therapy. The remaining 40 % improved by up to 70 %. Healing or recovering has lasted until present.

Interpretation of the results

Loss of function and cell aging only occur due to a lack of energy. All bladder muscles cells are energized through OHT. Moreover, all other cellular systems involved in the illnesses are activated and stimulated to function normally again.

Defective and dead cells are eliminated and renewed through activated stem cells.

Conclusion

So far there has been no therapy concept for long-term successful treatment of urge incontinence. With OHT, I have discovered a successful therapy for urge incontinence free of any side-effects and complications. The effort for successful treatment through OHT is minimal.

In addition to the bladder recovering, all other organs and tissues that get sick in the body are also cured. All ill systems and cells give peptide signals and are repaired through activated stem cells through OHT - these findings are conform to the latest stem cell research.

According to extensive research and practical application, ozone high-dose therapy was found as a safe and non-toxic therapeutic method. OHT stimulates the body´s own immune system.

34_ep - DETERMINATION OF URETHRAL HYPERMOBILITY BY PERINEAL ULTRASOUND VERSUS THE Q-TIP TEST.

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General University Hospital of Valencia, Department of Urology, Valencia, Spain [(1)]

INTRODUCTION AND AIM OF THE STUDY

Urethral hypermobility (UHM) is commonly associated with stress urinary incontinence (SUI). UHM has been evaluated as a factor and diagnostic tool for SUI (1,2). The Q-tip test is the standard invasive measurement technique.

The aim of the study is to evaluate UHM by perineal ultrasound by measuring different vesico-urethral angles and study the correlation of these angles with Q-tip test.

MATERIALS AND METHODS

A total of 100 women were included. We assessed UHM with Q-tip Test. Moreover, two different urologists performed a perineal ultrasound on mid-sagittal plane, blindly, where 3 angles were measured in possible relation with UHM. SVU angle: between the pubic symphysis, vesico-urethral junction and distal urethra, SVP angle (figure 1): between the pubic symphysis, vesico-urethral junction and tracing a perpendicular to the transducer, and retrovesical (RV) angle (figure 2): between the distal urethra, vesico-urethral junction and posterior bladder wall. Q-tip test was compared with the resulting difference at valsalva (V) and resting (R) angles. The discomfort of each test was measured using a numerical rating scale (rated 0-10). The chi-square test was used to compare the qualitative variables, the Mann-Whitney U test for the quantitative variables, and the intraclass correlation coefficient to measure inter-rater reliability.

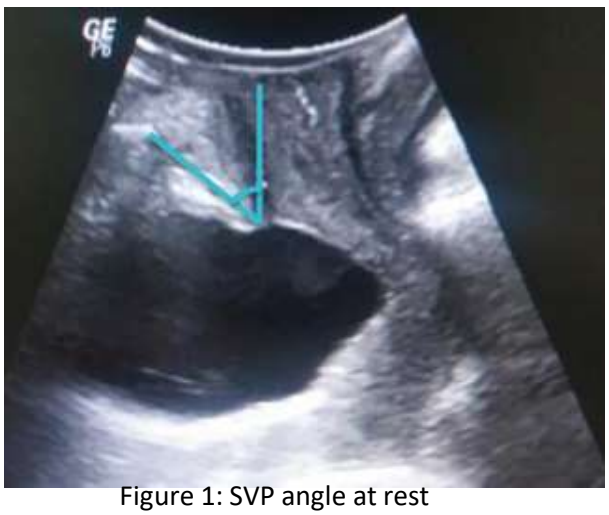

Figure 1: SVP angle at rest

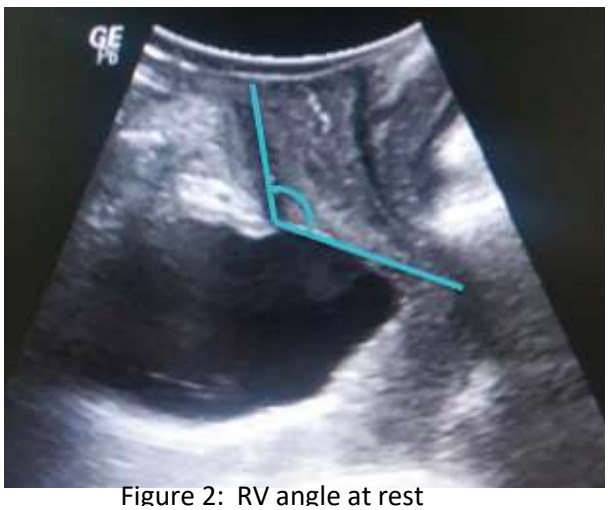

Figure 2: RV angle at rest

RESULTS

64% of the women studied had an HMU below 30º and 55% had SUI. The results are summarized in Table 1. When comparing the groups that presented a Q-tip test <30º and a Q-tip test > 30º, no statistically significant differences were obtained in the result of the SVU and RV angles. On the other hand, statistically significant differences were obtained for the SVP angle (p= 0,003).
The angles between the SUI and non-SUI groups were also analysed, obtaining statistically significant differences only for the RV angle (p = 0,016).
The mean discomfort of the Q-tip test was 3.6, while the ultrasound mean was less than 1.

	Q-tip test < 30º (n=64)	Q-tip test > 30º (n=36)	n = 100
Age	62,14 (24;84)	53,45 (34;76)	p = 0,028
SUI (n =55)	28 (39%)	27 (75%)	p = 0,003
POP-Q	-1,7 (-3;3,5)	-1,3 (-3;0)	p = 0,04
SVU angle (V-R)	5,15 (-28;81)	7,36 (-22,53)	p = 0,381
SVP angle (V-R)	28,06 (-27,81)	44,83 (-20;130)	p = 0,002
RV angle (V-R)	4,52 (-92;97)	11,14 (-61;102)	p = 0,549

Table 1: Patients features and angle difference results according to UHM.

INTERPRETATION OF RESULTS

The SVP angle is the only that presents a correlation with the Q-tip test. Using the SVP angle difference of 29.5º as a cut-off point, the sensitivity and specificity were 70% and 60% respectively. We obtained an intraclass correlation coefficient of 0.86 for this angle.

As a casual result, we found a correlation between SUI and RV angle.

CONCLUSIONS

There is a positive correlation between the measurement of the UHM using the Q-tip test and the ultrasound measurement of the SVP angle, which presents a very high inter-rater reliability. Perineal ultrasound is a less uncomfortable alternative to assess UHM that could replace the Q-tip test. There may be other utilities such as predicting SUI with the RV angle that require more studies.

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35_ep - RETROSPECTIVE AUDIT: REPAIR OF VAGINAL PROLAPSE 2020

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INTRODUCTION AND AIM OF THE STUDY

Pelvic organ prolapse is a common symptom reported by women, often associated with deterioration in quality of life and may contribute to bladder, bowel and sexual dysfunction[1].

NICE recommends all women receiving specialist evaluation, should undergo prolapse staging using the POP-Q (Pelvic Organ Prolapse Quantification) system. Management options should be discussed, including; lifestyle modification, topical oestrogen, physiotherapy, vaginal pessaries and surgery[2]. 10% women require at least 1 surgical procedure and nationally re-operation is as high as 19%[1]. A previous audit carried out in 2016 identified sub optimal documentation of treatment option discussion, rates of new voiding difficulty and new chronic pain.

This study aimed to;

1. Review rates of informed consent, discussion of risks and benefits as well as consideration of conservative management prior to surgery
2. Compare the incidence of intra-operative and post-operative complications
3. Compare recurrence rates following prolapse repair surgery
4. Review overall outcome after prolapse repair surgery (symptoms, ongoing management).

MATERIALS AND METHODS

50 patients undergoing pelvic floor repair, in a district general hospital, between January 2017 and February 2018 were identified retrospectively. Paper notes, clinical letters and investigation results were reviewed.

RESULTS

100% patients gave informed consent with documented risks and benefits on their consent form.

Figure 1 summarises those patients accepting / declining conservative management.

Figure I. Table summarising those patients accepting / declining conservative management (n=44)

Physiotherapy (17)		Physiotherapy declined (27)	
PT only	8	Surgery only	17
PT + oestrogen	1	Ring pessary	2
PT + ring pessary	5	Ring pessary + oestrogen	3
PT, ring pessary + oestrogen	1	Ring + gelhorn pessary	1
PT, ring, shelf, gelhorn pessary + oestrogen	1	Ring, gelhorn pessary + oestrogen	2
PT + gelhorn	1	Gelhorn pessary	1
		Gelhorn pessary + oestrogen	1

(PT + ring pessary, PT, ring pessary + oestrogen, PT, ring, shelf, gelhorn pessary + oestrogen, PT + gelhorn: 8)

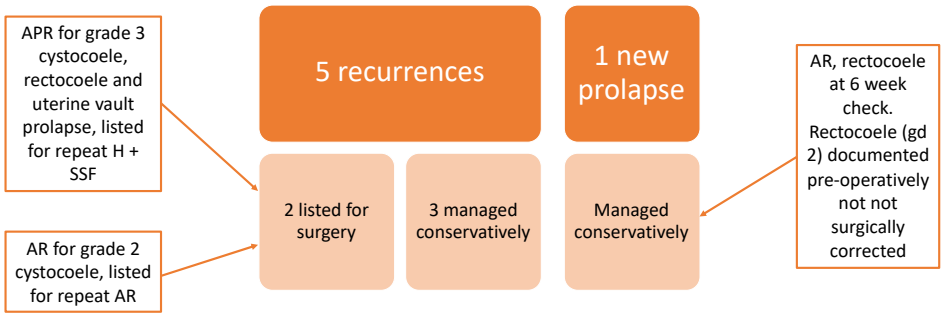
(Ring pessary, Ring pessary + oestrogen, Ring + gelhorn pessary, Ring, gelhorn pessary + oestrogen, Gelhorn pessary, Gelhorn pessary + oestrogen: 10)

There were no documented intra-operative complications. Immediate post-operative complications included pain requiring morphine, infection, infection confirmed on culture, bleeding and urinary retention with total cases of 1, 8, 1, 1 and 3 respectively (n=51). The infection confirmed on culture was an e.coli urinary tract infection (UTI).

The most common long-term complication was incontinence (12%), however, only 1 of these cases was de novo stress incontinence following an anterior repair for grade 1 cystocoele and rectocoele. 4 patients (8%) experienced long term discomfort, with 1 patient experiencing issues with sex life.

Figure II summarises those patients with prolapse recurrence or new prolapse diagnosis at 3 month follow-up.

Figure II. Summary of prolapse recurrence and management at 3 month follow-up (n=41)



Based on documentation at 3 month follow-up, 63% achieved 'full symptom resolution' or 'much improvement' in symptoms. 24% reported ongoing symptoms but general improvement or prolapse recurrence opting for conservative management. 12% were listed for further surgery or denied symptom improvement.

INTERPRETATION OF RESULTS

All patients were informed of the risks and benefits of surgery and gave informed consent, in accordance with national guidelines. However, documentation of discussion of non-surgical options was poor, without reference to the trust's nor Royal College of Obstetricians and Gynaecologists (RCOG) information leaflet (88%, expected standard 100%). Whilst it is probable that significantly more patients were offered conservative management in practice but not documented, this has increased from 83% in the 2016 audit.

Rates of intra and immediate post-operative complications were below expected standards. Higher rates of post-operative pain were reported at 3 month follow-up than expected (8% versus expected standard <5%), this has improved following rates seen at previous audit (10%). However, complete healing can take up to 6 months and therefore analysis of surgery success at this timepoint is premature.

Failure of surgery was noted in 12% of patients (less than published failure rate) with 8 % of patients experiencing on going urinary or vaginal symptoms. Again, this was at 3 month follow-up with no reference to the POP-Q classification when booked for repeat surgery. Therefore, staging of the prolapse recurrence remains unknown.

CONCLUSIONS

Although thorough clinical assessment using the POP-Q system and discussion of management options likely occur in practice, we are poor at documenting these key aspects at patient consulstation. Whilst this is unsurprising given the time pressures of clinic, accurate patient documentation remains of upmost importance, particulrly in the conext of urogyaecological surgery where clinical outcomes are constantly assessed. Provision of information leaflets could assist patient conselling in a time restricted environment.

This study has demonstrated excellent intra-operative complication rates and a low incidence of new stress incontinence following surgery. Although rates of post-operative pain have reduced, further improvement is necessary to achieve the accepted standard of <5% as well as assessment of long term outcomes after healing. Pre-operative patient counselling should be aimed at achieving realistic patient expectations in terms of post-operative recovery and pain.

There are several recommendations which can be made from this study. All patients should receive;

- Staging of prolapse at assessment in clinic and on operation note, using the POP-Q system
- Documented discussion of management options in clinic as follows; do nothing, conservative management: physiotherapy, pessary or surgery
- A copy of the trusts patient information leaflet and this documented in the notes
- Counselling of new chronic pain risk (8%), for those undergoing surgical management.

Further analysis using a quality of life questionnaire or assessment of recurrent prolapses using POP-Q at least 12 months following surgery would yield additional information regarding long term outcomes.

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36_ep - A MULTICENTER EPISIOTOMY SURVEY

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INTRODUCTION AND AIM OF THE STUDY

Episiotomy, routine or restrictive, has been a subject of great controversy. The literature neither obliges nor averts the procedure, however a strong recommendation for healthcare professionals to tailor their practice to each individualised patient and delivery seems to arise.

The aim of our survey was to explore everyday practices across the maternity services in the UK, rather than academic suggestions on episiotomy, and to evaluate the common belief that episiotomy decreases OASI (Obstetric Anal Sphincter Injury).

MATERIALS AND METHODS

We conducted an online survey, using an anonymous response collector platform, in order to be impossible to track back identifiable response. Ten multiple choice questions with free space comments constituted the questionnaire. This was disseminated to as many as possible maternity units across the country (North West, Midlands, London Area, East of England). We invited all healthcare professionals who are involved in performing episiotomies (midwives, junior and senior obstetricians) to participate in our survey.

We received 100 responses from March to June 2020. There were no exclusion criteria during analysis of the results.

RESULTS

The majority of our responders (62%) comprised midwives (25% being junior and 37% senior), with the rest being junior doctors (22%) and doctors above ST6/Senior trust grade and consultants (16%).

When asked about the numbers of episiotomies performed per year, 60% stated an average 0-10 with 20% performing more than 31; the remainder varied between 11- 30.

Two thirds of the participants would start an episiotomy at the posterior fourchette/opening of the vagina, whilst 7% would choose the inner folds of the vulva. One fifth would rarely use or avoid the use of episiotomy scissors.

Almost three quarters (72%) of the responses would perform a mediolateral episiotomy with approximately 1/3 using a 45 degree approach and the rest opting for 45-60 degree approach. Only 4% used a truly perpendicular (lateral) approach to the vertical axis.

Whilst 66% participants would choose an episiotomy when the head or device stretches the perineum, another 30% replied that they would only do one at crowning- when the maximum diameter of the head reaches the perineum.

The majority of the responses pointed to the use of episiotomy during all forceps delivery. Amongst the midwives 40% would perform an episiotomy to expedite delivery (fetal distress, “rigid” perineum).

Most of the survey group (80%) experienced at least one OASI per year during their practice.

Our responders stated that among the possible causes of OASI, the most prevalent were instrumental deliveries, rapid deliveries and short perineum. One quarter though believed that the failure to perform an episiotomy was related to OASI.

Almost half of the participants said that they would perform a generous episiotomy to avoid OASI.

INTERPRETATION OF RESULTS

The role of episiotomy during vaginal births lacks clear evidence (1,2). In the UK the Royal College of Obstetricians & Gynaecologists suggests that the decision for an episiotomy should be individualised to the delivering woman (1).

Our survey appears to have been mainly completed by midwives with less than five years of practice; therefore more doctors, who perform instrumental deliveries (therefore episiotomies) are required to normalise the distribution. However we were able to evaluate the practice among a great population of healthcare professionals, especially when a great proportion of national births are conducted by midwives.

The RCOG advises that a mediolateral cut at a 60degree angle is recommended (1). Our responders seem to agree with the guideline with the majority choosing the 45-60degree approach. The RCM (Royal College of Midwives) does not specify an angle, but supports the mediolateral technique.

The episiotomy scissors were introduced to reproduce the correct angle of the cut in every delivery, however 20% of our responders are likely to avoid its use.

With regards to the contribution of episiotomy in preventing OASI, it remains to be established; however the evidence is stronger for nulliparous women and instrumental vaginal births or in cases of very resistant perineum (1,3). The participants appear to think similarly, adding that they would perform a cut to expedite delivery in fetal distress.

With a lot of discussion around prevention of OASI and different care bundle projects running, our responders appear to be quite mindful by often giving a generous episiotomy to avoid the trauma, with 80% having had an OASI at least once a year.

CONCLUSIONS

Overall our survey showed that the healthcare professionals are mindful of ways to prevent OASI, with one being an episiotomy in selected circumstances.

We did not find any association between angle of episiotomy and OASI.

The limitation of our survey is that it seems to biased towards the midwives, therefore we plan to expand our population to achieve a normal distribution and re-analyse the results.

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37_ep - PELVIC PAIN – WHAT IS THE REAL IMPACT?

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INTRODUCTION AND AIM OF THE STUDY

Pain is a commonly reported symptom in urogynaecology outpatient clinics. Whilst it can be associated with many other symptoms and diagnoses, it can also restrict a person's ability to carry out daily activities[1]. It is very improtant to understand the impact of this pain on a woman's activities of dialy living as it carrys an enormous personal and economic burdern[2].

We aim to create a new focused and validated pelvic pain questionairre which allows to assess pain and it's impact on daily living. Thus enabling treatment which improves the patient's the quality of life.

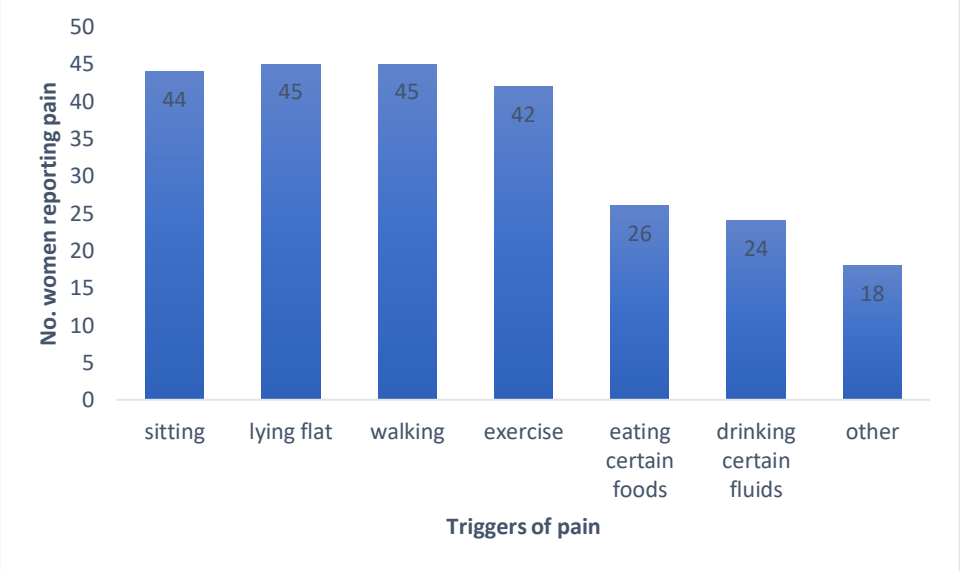
MATERIALS AND METHODS

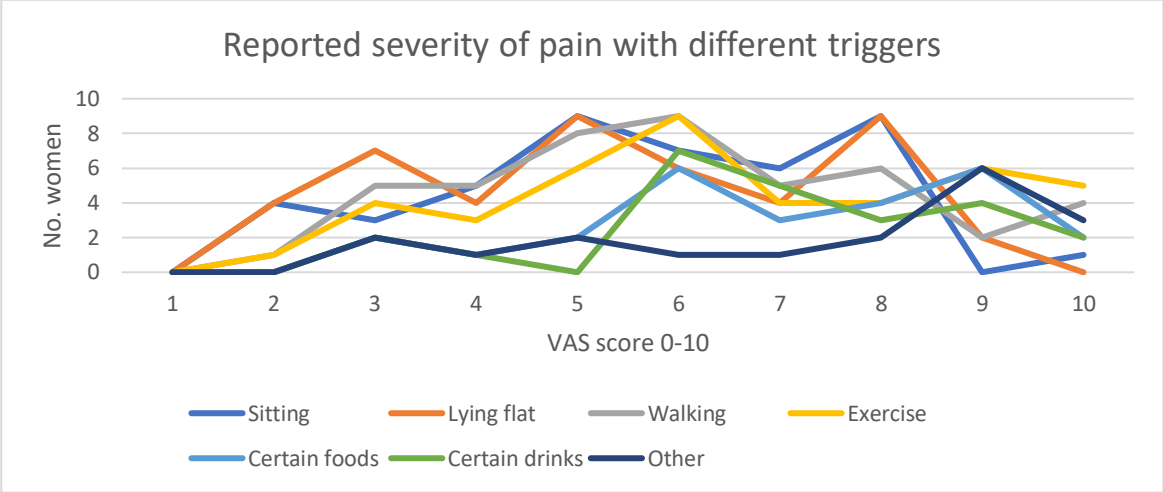
Women attending urogynaecology outpatient clinic were asked to prospectively complete a newly devised questionnaire assessing pain quality and its impact on their daily living. The questionnaire was devised using the ICS terminology document and literature review of other pain questionnaires used for pain assessment. Pain location and radiation was assessed using body maps. The impact on activities of daily living was assessed using frequency and severity scales.

RESULTS

A total of 95 women were recruited from urogynaecology clinics, with 60 reporting pelvic pain.

Of the women reporting pelvic pain, 52 (86%) had pain >6 months, with 48 (80%) experiencing pain over 12 months.





Of women reporting pain with activities of daily living:

< 1 minute	8
1-15 minutes	5
15-30 minutes	3
30-60 minutes	6
>60 minutes	38

INTERPRETATION OF RESULTS

- Pelvic pain is associated with triggers that form a part of daily function such as sitting, lying and exercise including walking.
- The severity of the impact of activities of daily living on the pain is variable but eating certain food, lying flat, walking and exercise produced the most severe pain.
- 63% of women reported that the pain triggered by normal activities lasted more than 60 minutes.

CONCLUSIONS

Pelvic pain is associated with activities of daily living, the severity and duration of this pain can limit daily function of a woman's life. The impact and limitation of the daily life of a woman reporting pelvic must be assessed in urogynaecology clinics with development of strategies to maximise their function.

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38_ep - SEXUAL FUNCTION AFTER ANTERIOR VAGINAL WALL PROLAPSE SURGERY IN NON MENOPAUSAL WOMEN

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INTRODUCTION AND AIM OF THE STUDY

Enhancing the quality of life of the patients is the goal of treating pelvic organ prolapse (POP). The effect of prolapse on the sexual function of women have been reported in several studies but there is still a debate in the literature about the impact of the surgical technique on restoring the sexual function after anterior vaginal wall prolapse surgery. The aim of this study was to compare female sexual function after surgical treatment of anterior vaginal prolapse with either laparoscopic pectopexy or sacrohysteropexy.

MATERIALS AND METHODS

It is a prospective study. All patients scheduled for an anterior vaginal wall prolapse surgery were included. There was no randomization but the choice of the surgical technique was discussed during a pre-operative meeting taking into consideration the patients' and the surgeons' characteristics. Patients were divided into 2 groups : laparoscopic pectopexy (n=40) or laparoscopic sacrohysteropexy (n=40). Patients with concomitant urinary incontinence were excluded. Postoperative outcomes were analysed at 6 months. The Arabic version of the Female Sexual Function Index questionnaire (FSFI) [1] was used to assess sexual function. Data were compared with independent samples or a paired Student's t-test.

RESULTS

Both groups were comparable in terms of age, smoking habits, parity, history of caesarean section and pelvic surgery, characteristics of the POP and body mass index. In the pectopexy group, the total mean FSFI score increased from 16.2 ± 3.8 to 23.8 ± 4.2 (p= 0.001). In the sacrohysteropexy group, the total mean FSFI score increased from 15.8 ± 4.7 to 22.2 ± 3.5 (p =0.003). There were no differences between the two groups neither preoperatively nor at the 6 month follow-up. Statistically significant improvements were noted in both groups in the domains of desire, arousal, lubrication and orgasm. There was no statistically significant improvement in the domains of satisfaction (2.9 ± 1.2 vs 3.5 ± 1.0; p= 0.08) and pain (3.1 ± 1.5 vs 4.0 ± 1.4; p= 0.07) only in the sacrohysteropexy group.

INTERPRETATION OF RESULTS

Our results suggest that, in non-menopausal women, both laparoscopic pectopexy and sacrohysteropexy improve the global scores of sexual function after anterior vaginal wall prolapse surgery. But these results may occult some disparities in favour of the pectopexy regarding the sexual satisfaction and dyspareunia. In fact in the sacrohysteropexy group there is no improvement in those 2 domains of female sexuality but there is no harm either.

CONCLUSIONS

Laparoscopic pectopexy and sacrohysteropexy both improved globally the sexual function after anterior vaginal wall prolapse surgery in non-menopausal women. However, only laparoscopic pectopexy improved the sexual satisfaction and dyspareunia at the 6 months follow-up.

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39_ep - OUTCOMES OF POLYACRAMIDE HYDROGEL (BULKAMID) IN PRIMARY TREATMENT OF STRESS URINARY INCONTINENCE

Shafia Shakoor Siddiqui [(1)] ***- Vuivun Wong*** [(1)] ***- Aniruddha Gayen*** [(1)]

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INTRODUCTION AND AIM OF THE STUDY

Management of female stress urinary incontinence(SUI) has undergone a paradigm shift during recent years. Apart from concerns about mesh slings, there is now a recognition that decision making when choosing treatment for SUI is multi-factorial and not based on success rates alone. Polyacramide hydrogel (Bulkamid) was historically only offered as an option in failed SUI surgeries. However it is now being increasingly recognized as a primary treatment of SUI and is gaining popularity due to its low risk profile and being least invasive. Aim of our review was to audit the outcomes of Bulkamid urethral injection in primary treatment of SUI and stress predominant mixed incontinence at our centre.

MATERIALS AND METHODS

This was a retrospective case note review of all patients undergoing Bulkamid procedure for SUI or stress predominant MUI from January 2015 till October 2019 as primary treatment. All patients, once diagnosed with SUI are offered a choice of Bulkamid, Autologous sling and colposuspension. A total of 38 patients underwent Bulkamid injections using a single use Bulkamid urethral bulking system by two experienced surgeons. To achieve good coaptation of the urethral wall, 1-2mls of Bulkamid are injected at 3 or 4 sites with no more than 0.5ml at each site. Follow-up at 3 months is arranged to discuss success of procedure and ICIQ scores recorded. Data was recorded and analysed using Microsoft Excel.

RESULTS

A total of 38 patients underwent Bulkamid injections in review period as primary treatment of SUI, 18(47.3%) patients had pure stress while 20 (52.7%) with mixed incontinence symptoms. Median age of cohort was 69 years (range 26-94) Median parity of 2 (range 0-3) and median BMI 28 kg/m^2 (range 21-40.2). At 3 month follow-up, 2 (5.3%) patients had complete cure of SUI and 19 (50%) had significant improvement of SUI symptoms giving a success rate of 55.3% for the procedure. No change in SUI symptoms was seen in 17(44.7%) patients. There was no correlation noted of improvement with difference in number of injection sites. Five patients with unchanged symptoms went on to have mid-urethral sling. One had repeat Bulkamid which was also unsuccessful. Two patients opted for second Bulkamid and were awaiting for procedure at the time of review. None of the patients had any intra-operative complications. Three patients had voiding dysfunction after the procedure and required catherisation. Out of these three two had no improvement in symptoms suggesting a possibility of gel being squeezed out due to cathetar. Median ICIQ-UI score preop was 14 (range 9-21) and post-op was 10 (range 0-21). Median post-op score in patients with symptom improvement/cure was 7 (range 0-12).

INTERPRETATION OF RESULTS

Bulkamid is safe and effective treatment for primary treatment of SUI and stress predominant mixed urinary incontinence. In our cohort, the success rate of 55.2% was comparable to the quoted rate of 50-70% in literature.

CONCLUSIONS

Bulkamid is currently perceived as a safest and least invasive treatment option and more patients are inclined to choose it due to its low risk and safety profile.

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40_ep - POST-MARKET CLINICAL FOLLOW UP ON AN ANCHORLESS SELF-RETAINING SUPPORT (SRS) SYSTEM

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INTRODUCTION AND AIM OF THE STUDY

Pelvic organ prolapse refers to loss of support to the uterus, bladder and bowel leading to their descent from the normal anatomic position towards or through the vaginal opening. POP reconstruction with the implantation of alloplastic meshes shows better anatomical results compared to native tissue repair (1). This prospective, multicentre, observational, usability study was set up to investigate the usability of the vaginal anchorless titanised self-retaining support (SRS) implant (Lyra Medical Ltd., Israel; DRKS 00016753). Specifically, the aims were 1) determining if the SRS Implant is suitable for the daily clinical practice, 2) evaluating the appropriateness of the device and handling during procedure, and 3) determining the occurrence and kind of complications. The SRS Implant is indicated to restore organ support in women (≥ 21 years) suffering from anterior vaginal wall, apex and uterine prolapse.

MATERIALS AND METHODS

This PMCF (Post Market Clinical Follow-Up) study was planned to document experience with the SRS Implant from at least five surgeons over a period of twelve months. The surgeons were asked to fill in a questionnaire including data on anamnesis, the surgical procedure, intraoperative complications and handling of the SRS Implant. Data from women with symptomatic anterior and/or apical prolapse ≥ stage 2 who were eligible for implantation of the SRS Implant were collected.

RESULTS

From December 2018 to February 2020 experience from eleven surgeons in nine hospitals in Germany, Austria and Hungary was documented and analysed. In total, 174 patients were included and treated with the SRS Implant. Patients were aged between 51 and 96 years with a mean age of 72.7 ± 7.9 years (n = 173, one value missing). 83.8 % of patients were 65 years old or older. The analysis of the questionnaires revealed an improvement of the POP-Q classification after implantation of the SRS Implant (for details see Table 1). Of note, postoperative POP-Q stages are only estimated.

Table 1 POP-Q classification prior to and after implantation of the SRS Implant

POP-Q stages	anterior compartment [% of patients]		apical compartment [% of patients]	
	prior implantation	postoperatively (estimated)	prior implantation	postoperatively (estimated)
Stage 0	0	77.6	9	66.7
Stage I	0	22.4	26	32.8
Stage II	22	0	40	0.6
Stage III	78	0	21	0
Stage IV	n/a	n/a	3	0

Considering the surgeons' experiences, the surgical procedure with the SRS Implant was easier compared to other reconstructions using surgical meshes. The mean duration of the surgery without concomitant procedures amounted to 21.0 ± 8.3 min (median: 20.0 min; range: 8.0 – 50.0 min), and with concomitant procedures to 40.8 ± 15.1 min (median: 37.0 min; range: 15.0 – 82.0 min). In 19.5 % of patients a posterior colporrhaphy was concomitantly conducted.

INTERPRETATION OF RESULTS

The SRS Implant is a safe and effective system for anterior and/or apical prolapse reconstruction. Elderly patients with a POP-Q ≥ stage 2 may benefit from a short implantation procedure.

CONCLUSIONS

Data collected during this prospective post-market clinical follow up suggest the SRS Implant to be safe and easy to handle. The rate of complications during the implantation procedure is low. Since fixation is not necessary the duration of the surgical procedure is short in the hand of a trained surgeon. While the SRS Implant imitates an intrauterine pessary estimated POP-Q stages are improved. The limitation of this observational study is the missing follow up. However, the data support the positive conclusion of Levy et al. (2, 3) with a high efficacy and a very good safety profile of the SRS Implant.

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41_ep - SINGLE-INCISION SLINGS FOR THE TREATMENT OF STRESS URINARY INCONTINENCE: EFFICACY AND ADVERSE EFFECTS AT 10-YEAR FOLLOW UP

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INTRODUCTION AND AIM OF THE STUDY

Stress urinary incontinence (SUI) is a common condition defined as any involuntary leakage of urine with activity such as laughing, coughing, and sneezing. Surgical treatment is indicated when conservative management fails. Many types of surgery have been performed over the years. To date, suburethral slings are considered the first option because of high efficacy rates. Single incision slings (SISs) showed cure rates comparable to standard tapes, with efficacy unaffected by age, BMI, obstetrical history and proper bilateral anchoring on obturator membranes.[1-3] However, they are not considered as a first choice surgical treatment due to lack of data about long-term outcomes. The aim of our study was to assess the long-term results of urinary incontinence treatment after single-incision sling implantation at 10 years follow-up and to investigate possible deterioration over time.

MATERIALS AND METHODS

This retrospective study analysed women with subjective and urodynamically proven stress urinary incontinence who underwent single-incision sling procedure. Objective cure rate was assessed with a 300ml stress test. Subjective cure rate was determined by Patient Global Impression of Improvement (PGI-I) questionnaires. ICIQ-SF scores were collected to assess severity of both stress and de novo urge urinary incontinence. Moreover, a single self-answered patient-satisfaction scale was collected. Findings were compared to short term outcomes in the same patients, available through our previous database, in order to detect possible outcomes deterioration over time.

RESULTS

Records about 60 patients were analysed. Nine patients (15%) were lost at follow-up. 51 patients completed the evaluation, with a mean follow-up of 10.3 ± 0.7 years. Objective and subjective cure resulted 86.3% and 88.2% respectively. Mean PGI-I scores and ICIQ-SF were 1.5 (± 1.0) and 3.2 (± 4.8) respectively. Patients' satisfaction scored 8.6 (± 2.6) out of 10. No long-term complications occurred. Comparison between short term (2.6 ± 1.4 years after surgery) and long-term follow-up did not show significant deterioration of outcomes over time.

INTERPRETATION OF RESULTS

Nowadays, synthetic midurethral slings are being questioned for the risk of graft-related complications, such as difficult-to treat pain issues. However, SISs have some theoretical advantages compared to both retropubic and transobturator tapes, including less amount of prosthetic material and lack of the passage of tape and trocar through the obturator foramen and adductor tendons. This is consistent with our study, which showed no long-term tape erosions or pain syndrome. Moreover, we found no deterioration of cure rates over time, without increase in functional disorders compared to short-term outcomes.

CONCLUSIONS

Single-incision slings showed to be a procedure with a great efficacy and safety profile at very long-term follow-up. Cure rates and functional outcomes did not show any deterioration over time compared to short-term results.

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42_ep - A COMPARATIVE STUDY OF PERIOPERATIVE OUTCOMES AND PAIN MANAGEMENT AFTER LAPAROSCOPIC VS VAGINAL APPROACH FOR GENITAL PROLAPSE REPAIR

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INTRODUCTION AND AIM OF THE STUDY

There are many surgical modalities to treat Pelvic Organ Prolapse (POP), the common approaches include vaginal and abdominal access, both have various benefits and disadvantages for the patients. The objective of this study is to determine the effect of Laparoscopic versus Vaginal approach on perioperative outcomes and postoperative pain management in POP repair.

MATERIALS AND METHODS

79 patients who underwent genital prolapse repair between February 2017 to May 2020 were enrolled in the study. Of these, 26 patients underwent laparoscopic repair (Group A) and 53 underwent trans-vaginal repair with mesh (Group B). All patients from group A, received ultrasound - guided Transversus Abdominis Plane (TAP) Block for pain control at the end of the surgery.

RESULTS

The median age of the patients was 69.8 years (range 51-79 years) in group A and 67.6 years (range 41-84) in group B. The BMI was similar between both groups (25.6 vs 24.8, p=1.15). The median operative time was shorter in the trans-vaginal repair compared to laparoscopic surgery (66.42 vs 139. min, P <0.05), the median estimated blood loss was similar in both groups (44.4 vs 45.3 ml, p = 0.46).

No difference in intraoperative and short-term postoperative complications between both groups was observed [(2)7.7% vs (6)11%]. The median length of hospital stay was shorter following Laparoscopic surgery compared to Vaginal (1.42 vs 1.74 days, p <0.05). The median pain intensity according to VAS score in the first postoperative day was lower in Group A compared to Group B (p <0.05) as well as in the second postoperative day but that did not reach statistical significance (p = 0.94).

The median use of analgesic treatment at the first postoperative day was lower in Group A compared to Group B (p <0.05). At the first postoperative day, 76.9% of the patients from Group A did not require analgesic treatment. None of the patients from group A who remained hospitalized more than one day required analgesics on the second day after surgery. None of the patients required opiate treatment in both groups.

CONCLUSIONS

Although the operative time using laparoscopic approach combined with TAP block is longer compared to trans-vaginal approach, it is still superior in reducing pain intensity and analgesics use postoperatively. In addition, laparoscopic approach appears to be effective in reducing length of stay in patients after genital prolapse repair.

43_ep - INTEREST OF MULTIDISCIPLINARY AND STANDARDIZED CARE PATHWAYS WITHIN A PERINEUM CLINIC

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INTRODUCTION AND AIM OF THE STUDY

Perineal disorders such as prolapses, faecal and urinary incontinence, perineal pain or mucosal diseases affect 25% of women during their lifetime. These diseases can be complex and chronic; they often require multidisciplinary approach. Our multidisciplinary perineology unit was implemented ten years ago. Until 2017, a maximum of the complementary examaminations was carried out during the first consultation but without preliminary reflexion time. These exams include, among others, perineal and gynaecological ultrasounds, urodynamic examination, cystoscopy, physiotherapist diagnostic advice or other medical imaging procedures. In addition, in 2018, management of diseases requiring an assessment was modified to new evidence-based care pathways. Since 2019, during a standardized intake consultation, a perineologist takes the medical history, examines the patient (including POP-Q if needed) and states a diagnostic hypothesis. The assessment is crafted with the patient's approval in a shared decision process. This first consultation is followed by a multidisciplinary diagnostic session, allowing the necessary examinations to be carried out. Their results are analysed during a multidisciplinary concertation at the end of the session. The concerted therapeutic proposal is thereafter discussed the same day by the patient and her specialist in perineology. When patient adheres to proposed treatment, it is directly planned with the coordinating nurse.

The aim of this study is to assess the efficiency of such an organization and its impact on patient's adherence on assessment and treatment.

MATERIALS AND METHODS

This retrospective study compares the assessments including a urodynamic examination (number, type and delay of examinations and consultations) carried out in 2017 and 2019 as well as their adherence to assessment, medical follow-up and adherence to treatment.

RESULTS

From a median of 3 examinations per assessment in 2017, the assessments include 6 examinations in 2019, 70% of which were carried out in a single day (median elapsed time: 33 days). The examinations took place on 129 different days in 2017 compared to 106 in 2019. Adherence to assessment and treatment increased in 2019 compared to 2017. It was estimated through the number of refusals: examinations refusals decreased from 4% in 2017 to 0.05% in 2019 and treatments refusals decreased from 5% in 2017 to 2% in 2019. Medical follow-up increased from 33% to 39 % (41% if taking scheduled appointments into account).

INTERPRETATION OF RESULTS

Following the implementation of new evidence-based care-pathways in 2018, only patients with complex pathologies require a urodynamic examination in their global and tailored assessment. Therefore, the number of examinations per assessment has increased. These 6 examinations in median were carried within a delay of 33 days which is short, allows for informed prior consent and is acceptable in a context of non-acute chronic pathology. We managed for 70% of these assessments to be performed on a single day, 85% on two different sessions (because of unavailability of the patient or staff). These multidisciplinary sessions were grouped together effectively on a restricted number of consultation periods. This rationalizes the timetables of the caretakers involved. The number of examinations and treatments refusals, already low in 2017, decreased even more in 2019 reflecting the involvement of our patients in their assessment and therapeutic decision. In the same way, the medical follow-up in consultation of these patients has increased suggesting their satisfaction.

CONCLUSIONS

Implementing horizontal multidisciplinary diagnostic sessions is time-effective, allows comprehensiveness of the assessment carried out and also increases patient's therapeutic adherence.

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44_ep - DOES SUCCESSFUL URETHRAL CALIBRATION RULE OUT SIGNIFICANT FEMALE URETHRAL STRICTURE? AN INSIGHT INTO THE DIAGNOSIS AND SURGICAL OUTCOMES OF FEMALE URETHRAL STRICTURES

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INTRODUCTION AND AIM OF THE STUDY

The diagnosis and treatment of female urethral stricture disease (FUSD) are poorly studied with the scarcity of data on evaluation, variable definitions, and long-term surgical outcomes. [1] The exact reason as to why patients on recurrent urethral dilation and those with successful calibration keep dawdling with voiding LUTS is still the grey area. Further, in the absence of any standard assessment protocol for FUSD, most urologists rely on a mixed bag of patient history and physical examination and investigations. We in this study have tried to characterize the clinical and video urodynamic study (VUDS) and urethroscopy findings of patients having undergone successful surgical management for female urethral stricture disease. Along with it, we have tried to understand whether a urethral dilation provides the same clinical outcome in comparison to female urethroplasty and retrospectively procreate a plausible diagnostic approach for patients likely to benefit from surgical intervention in FUSD.

MATERIALS AND METHODS

A retrospective review of 16 females who underwent surgical management of urethral stricture disease in the Department of Urology at our tertiary care center from October 2017 to November 2019 was performed. At our institute, we routinely screen for bladder outlet obstruction (BOO) in patients who have presence of voiding LUTS, and have uroflowmetry flow rate <15ml/s or IPSS >7, or a post void residual urine (PVR)>100 ml on ultrasonography or a history of prior urethral dilation with or without improvement in flow. All these subjects are then calibrated with 14 F catheter at the outpatient clinic to rule out any obvious anatomical obstruction. Those patients who fail calibration are subjected to urethroscopy while rest who had successful calibration are further evaluated with VUDS. Presence of urethral ballooning proximal to a portion of urethral narrowing along with urodynamic BOO defined as a sustained detrusor contraction of any magnitude with a fixed flow pattern of Qmax< 15 ml/sec and a synergic sphincter EMG activity was considered suggestive of stricture**.** All patients suspected to have urethral stricture disease on calibration or on VUDS underwent urethroscopy, initially with a 7.5 F ureteroscope to characterize urethral mucosal abnormality along with any obvious obliteration and further, with a 17-F cystoscope sheath to assess rigidity and distensibility of the urethra. After considering patients' preferences and correlation of clinical, urethroscopy and VUDS characteristics 16 patients underwent urethroplasty for FUSD with a dorsal onlay technique. Vaginal and buccal mucosal grafts were used.

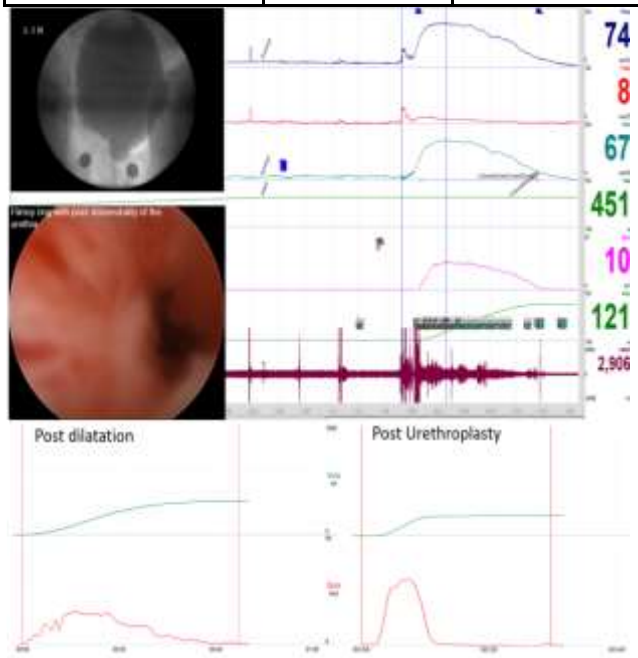
RESULTS

A total of 16 patients underwent surgical management of female urethral stricture disease between October 2017 to November 2019. The median age of the patients was 52 years(40-76). The mean AUA-SS, flow rate, and PVR at presentation were 23.88±4.95, 7.72±4.25mL/s, and 117.06±74.46mL respectively.The mean AUA-SS, flow rate, and PVR after urethroplasty were 3.50±3.44, 22.34±4.80mL/s, and 12.50±8.50mL respectively and the improvement was statistically significant($p<0.05$). The mean flow rate after endo dilation (17F) was 11.4±2.5 ml/s while after urethroplasty improved to 20.30±4.19ml/s which was statistically significant($p<0.05$). 13 out of 16 patients with succesful calibration on VUDS demonstrated significant BOO with mean pdet@Qmax of 69.85± 20.48cmH2O and mean flow rate of 7.23± 3.72ml/s. On urethroscopy in 4 (25%) patients, the scope couldn't be negotiated due to tough dense stricture, while 12 (75%) had variable stigmata of stricture.(Table 1). A total of three buccal grafts were used, one each for the case of pan urethral stricture, radiation stricture, and lichen sclerosis while in the rest 13 vaginal grafts were used. One patient had reported transient stress incontinence after urethroplasty which resolved after a month. None of the patients reported persistence of bothersome LUTS or recurrence of the stricture in the subsequent 12-months of follow-up.

Table 1 - Comparison of various parameters among the failed calibration and successful calibration group.

Figure- 1 VUDS and urethroscopic correlation showing pDet@Qmax 67cmH2O, flat fixed flow curve, proximal urethral ballooning, stigmata of stricture as a flimsy ring, Qmaxring, Qmax after dilation~14mL/s and after urethroplasty~30mL/s

Parameter	Failed calibration(n=3)	Successful calibration with VUDS and urethroscopy correlation suggestive of stricture(n=13)
Mean IPSS(Preop)	27.33±2.0	23.08±5.12
Mean IPSS (Postop)	2.67±2.5	3.69±3
Mean Duration of symptoms(years)	7.83±10.6	5.25±3.8
Recurrent dilation	2(66.7%)	10(83.3%)
Qmax (Preop) (mL/S)	4.6±2.4	8.44±4.32
Qmax (Postop)(mL/S)	26.1±4.5	21.46±4.5
Urethroscopy(n)	Nil	Stigmata in 12(92.3%)
PVR(Preop)(mL)	200	97.9±44.6
PVR(Postop)(mL)	9±8	13.3±8.7



INTERPRETATION OF RESULTS

Female urethral stricture is an uncommonly diagnosed clinical entity that can have a profound impact on the quality of life[2] Whether having caliber more than 14 F precludes significant BOO is a matter of debate. These patients pose a diagnostic dilemma as to consider them having a dysfunctional voiding pathology or a true anatomical obstruction.Video urodynamics enters here to give a clearer picture of the functional status of the bladder as it demonstrates both urodynamic and radiographic evidence of bladder outlet obstruction simultaneously along with the corresponding level of obstruction. In our study, 13 out of 16 patients with caliber of more than 14 F along with various urethroscopic abnormalities were found to have significant BOO on VUDS.(Figure-1) 12 patients had a flimsy or negotiable disease on urethroscopy but had a significant obstruction on VUDS. All these patients did extremely well after urethroplasty. In our study significant

improvement in mean flow rates after urethroplasty as compared to those after endo dilation was found.To our knowledge this is the first study to elucidate the clinical and videourodynamics parameters for a prudent and early diagnosis, decision making, and embark upon the management of patients with female urethral stricture especially even when the patient may be having successful urethral calibration.

CONCLUSIONS

We employ a comprehensive and holistic approach towards the diagnosis of female urethral stricture which includes a high index of suspicion in patients with persistent LUTS despite recurrent dilations, an astute correlation between the clinical aspects of the patient with visual inspection of the narrowing and with a VUDS to objectively confirm or rule out female urethral stricture. Also we believe that significant anatomical obstruction in female urethral stricture disease cannot be solely ruled out on the basis of a good caliber. Further dilation may provide a good caliber but still is not sufficient enough to relieve an obstruction which probably lies beyond the lumen

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45_ep - THE MRI URETHRAL RHABDOSPHINCTER'S MORPHOLOGY IN CONTINENT WOMEN.

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INTRODUCTION AND AIM OF THE STUDY

MRI is helpful to identify the urethra and urethral rhabdosphincter muscle. Aim of this study is to evaluate the normal values of the female urethra and urethral rhabdosphincter on MRI of subjectively continent women.

MATERIALS AND METHODS

This is a study of prospectively collected data regarding female patients who underwent pelvic MRI for benign gynecological pathologies and were subjectively continent.

Two radiologist evaluated the following urethral features: transverse and anterio-posterior (A-P) diameter. Urethral rhabdosphincter was also evaluated at the level of midurethra. Measurements included rhabdosphincter's thickness at the 3(R), 6(P), 9(L) and 12(A) o'clock position. Association of the above urethral features with patient's age, somatometric measurement and parity was statistically tested.

RESULTS

MRI measuraments of the urethral and urethral rhabdosphincter are presented in table 1.

Age and BMI values (table 2) were significantly correlated with the urethral transverse diameter.

CONCLUSIONS

The urethral rhabdosphincter seems to be thicker on the ventral and lateral sides of the urethra, and thinner on the dorsal side at the level of midurethra. With the proceeding of age urethral transverse diameter seems to increase without increase of the urethral rhabdosphincter thickness, fact that could be related with connective tissue deposition.

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Table 1. Urethral and urethral rhabdosphincter's parameters

	Mean	SD	Minimum	Maximum
Urethral A-P diameter (cm)	13.6	1.9	9.1	18.6
Urethral transverse diameter (cm)	14.5	1.8	10.9	21
R (cm)	1.8	0.3	1.2	2.6
A (cm)	1.5	0.4	0.9	2.8
L (cm)	1.6	0.3	1.1	2.4
P (cm)	1.2	0.4	0.7	2.5
(R+L)/2 (cm)	1.7	0.3	1.3	2.5

R: Urethral rhabdosphincter thickness at 9 o'clock

A: Urethral rhabdosphincter thickness at 12 o'clock

L: Urethral rhabdosphincter thickness at 3 o'clock

P: Urethral rhabdosphincter thickness at 6 o'clock

Table 2. Correlation coefficients of age and bmi with urethral and urethral rhabdosphincter's parameters

		AGE	BMI
Urethral A-P diameter (cm)	r	0.15	0.16
	p	0.129	0.109
Urethral transverse diameter (cm)	r	0.34	0.22
	p	**0.001**	**0.032**
R (cm)	r	0.21	0.04
	p	0.19	0.736
A (cm)	r	0.06	0.04
	p	0.539	0.715
L (cm)	r	0.07	0.01
	p	0.517	0.938
P (cm)	r	0.16	0.01
	p	0.126	0.890
(R+L)/2 (cm)	r	0.16	0.02
	p	0.113	0.881

R: Urethral rhabdosphincter thickness at 9 o'clock

A: Urethral rhabdosphincter thickness at 12 o'clock

L: Urethral rhabdosphincter thickness at 3 o'clock

P: Urethral rhabdosphincter thickness at 6 o'clock

46_ep - ARE UTERINE FIBROIDS A CAUSE FOR INCONTINENCE?

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INTRODUCTION AND AIM OF THE STUDY

Uterine leiomyomata, although predominantly benign, can give rise to a wide variety of gynaecological symptoms, most notably menorhaggia and abdominal bloating, and including lower urinary tract symptoms and incontinence.

Our study aims at establishing the prevalence of overactive bladder syndrome in patients with fibroids in our population, and exploring the correlation between the size and location of fibroids with the severity or otherwise of urinary symptoms.

MATERIALS AND METHODS

50 women who had been referred for ultrasound due to possible benign uterine pathology and found to have uterine fibroids, were identified in consecutive order. Their consent to participate in the study was sought. Patients were asked a series of demographic questions and questions related to their urinary habits, including any issues with urinary incontinence. The participants were asked to complete a questionnaire aimed at establishing the time of onset of incontinence, the severity of their symptoms and the affect this has on their Quality of Life. Participants were also asked whether they had stress incontinence, urge incontinence, mixed incontinence, frequency and urgency. Furthermore, those women who reported any type of incontinence were identified and a clinical correlation between the size and location of the uterine fibroid/s and their incontinence symptoms was sought.

RESULTS

50 Caucasian women were recruited, with a mean age of 43 years. All patients were found to have at least one uterine fibroid of varying dimensions and location within the uterus.

22 patients reported lower urinary tract symptoms related to urinary incontinence .Of these, 10 patients reported mixed incontinence, 5 stress incontinence and 7 overactive bladder symptoms. Frequency was the predominant symptom overall, present in 20 patients (91%), followed by urgency in 15 patients (68%). Of the 7 patients with overactive bladder symptoms, all reported urgency as the most bothersome symptom.

INTERPRETATION OF RESULTS

Lower urinary tract symptoms were reported in 44% of women in our study population. Urinary incontinence is present in 30%, with mixed incontinence predominant. 14% had overactive bladder (OAB) symptoms.

The overactive bladder subgroup had either intramuscular or sub-serous fibroid, varying between 4.6 cm^3 to 12.2cm^3 in volume. The locations were various and a positive correlation between the size and location and severity of OAB symptoms could not be established. Similar findings were also noted in patients with mixed incontinence. In the stress incontinence subgroup, 3 out of 5 patients had an anterior wall fibroid larger than 6 cm^3. Several studies have reported an association between anterior uterine wall fibroids and lower urinary tract symptoms (1). This relationship cannot be ascertained in our study due to limitations in sample size.

It is well established that both the presence of leiomyomata and urinary incontinence are independent risk factors associated with a decreased QOL. Whilst all patients reported a decreased QOL, this was substantially worse in those with incontinence episodes. The interrelationship of these factors needs to be established.

Interestingly, most women initially presented complaining of menorrhagia or abdominal bloating. Incontinence is still grossly under-reported as women are too embarrassed to seek help.

Whilst a mass pressure effect is considered as the primary cause of lower urinary tract symptoms due to fibroids, hormonal, vascular and neurogenic causes have also been proposed as possible underlying pathophysiological mechanisms. There is conflicting evidence in the literature regarding the association between lower urinary tract symptoms and fibroid volume and position. Our study also reflects this. Some studies have however shown improvement in incontinence symptoms when fibroids were either embolized or surgically removed (3).

CONCLUSIONS

Our study confirms that lower urinary tract symptoms are prevalent in premenopausal women with uterine fibroids. Further larger studies are required to examine the possible correlation between fibroids and overactive bladder.

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47_ep - THE OUTCOME OF KELLY PLICATION WITH ANTERIOR REPAIR - BACK TO THE FUTURE

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INTRODUCTION AND AIM OF THE STUDY

Professor Howard Atwood Kelly (February 20, 1858 – January 12, 1943), M.D., was an American gynaecologist at the Johns Hopkins Hospital in Baltimore, Maryland. In 1913, he introduced the plication procedure stress incontinence, known as "Kelly Plication Procedure" (1).

The anterior repair and *Kelly Plication* were the most popular primary procedure for "*Stress Urinary Incontinence*" till 1970's (2). It remains in use largely because of relatively low morbidity and its familiarity to gynaecologist. The rate of serious complications is less than 1% (3). High recurrence rate is the issue, but it was attributed to different surgical techniques.

The mesh procedure was introduced in 1998 and was described by some as the gold standard treatment for female stress urinary incontinence. By 2014, 29 different products had appeared on the market, and between 2005 and 2013 over 170 000 devices were sold in the UK, and more than 3.6 million worldwide.

By 2016-17, media highlighted the adverse effects of this procedure and women were very reluctant to go for mesh procedure which led to massive drop of patient in take for this procedure. On 10 July 2018, there was a national pause by National Health Service UK (NHS UK) to perform mesh procedures for stress urinary incontinence. Therefore we offered the Kelly plication procedure for treatment of stress incontinence, where women is undergoing prolapse surgery.

The aim of this study was to see the outcome of anterior colporrhaphy and Kelly plication for stress urinary incontinence in our hospital.

MATERIALS AND METHODS

In this study, 27 patients were recruited, who underwent anterior Colporrhaphy with Kelly plication between 1st of May, 2017 till 30th of May,2018 at our institution.

All patient had physiotherapy and Urodynamic studies pre-operatively. We did a follow up for an average for 2 years. The patient's characteristics, operative data and outcome were reviewed. Questionnaire ICIQ USIF (Short form) were given to the patient at the appointment dates.

All the data was compiled and analysed on Microsoft Excel 2010®.

There have been different techniques described in the literate. We used two mattress sutures, one placed at the level of mid urethra and second suture at the bladder neck. We used nonabsorbable suture for plication.

RESULTS

The average age was 48.96 years and average BMI was 30.07.

There were 6 (22%) patients who had post-operative urinary retention and 6 months later voiding problems settled in 5 (18%) cases. Only 1 (3%) patient was unable to void urine and needed removal of Kelly plication.

There was only one patient who was unsuccessful and underwent Burch colposuspension.

Five (18%) patients had urge urinary incontinence which settled with the use of anticholinergics.

The success rate was 92.34 % at 1 year and 91.4%% at 2 year

INTERPRETATION OF RESULTS

In our hospital we have found that Kelly plication with anterior repair is a successful procedure. it appears to be effective and safe for surgical treatment of Stress Urinary Incontinence along with prolapse surgery.

CONCLUSIONS

In the current situation, the conventional surgical procedure Kelly plication should be offered to the women, who has Stress Urinary Incontinence and undergoing prolapse surgery.

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48_ep - ANTERIOR TRANSOBTURATOR TAPES (ATOTS) AND UTEROSACRAL LIGAMENT AUGMENTATION (USLA) FOR CORRECTION OF POP (VAGINAL APPROACH)

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INTRODUCTION AND AIM OF THE STUDY

To evaluate efficacy and safety of apical and anterior vaginal prolapse repair using self-tailored tape implants with vaginal surgical approach.

MATERIALS AND METHODS

Between January 2017 and May 2020, 58 corrections of apical and anterior vaginal prolapse stage II-IV by ICS system (median age 61 years [40-79 years]) were performed with ATOTs and USLA by the same experienced surgeon. The preoperative vaginal status was assessed as stage II-IV by the ICS system. Non-absorbable polypropylenes mesh (60 g/m2) 10 cm x 15 cm was used to individually design tape implant (Figure 1). Two pairs of tapes were inserted transobturatorly (under urethra and bladder neck) through 1 dermal incision on each side (Figure 2). Two apical tapes for USLA had been individually moved laterally into the vesicovaginal space before being inserted completely tension free in the direction of both uterosacral ligaments (out of the penetration line during sexual intercourse) (Figure 3). ATOTs with USLA were used with or without vaginal hysterectomy (45 and 8 cases, respectively). In 5 cases ATOTs with USLA were used for correction of vaginal cuff prolapse (Table 1). The postoperative ICS stage was assessed on day 5, 3 months and 12 months after surgery. Urine, fecal continence, and sexual function were evaluated using a questionnaire 12 months postoperatively.

RESULTS

All patients had an ICS stage zero on postoperative day 5 and 54 out of 58 patients (93%) had an ICS stage zero 3 months after surgery (4 patients had not yet had a postoperative examination after 3 months). 43 out of 58 patients (74%) have already completed 1 year follow up and remained ICS stage zero, without any pelvic pain. During the first year of follow up, no serious complications were observed.

INTERPRETATION OF RESULTS

In contrast to other currently used methods for the treatment of pelvic organ prolapse, where the apical tapes are attached directly, around or through the sacrospinal ligament, reconstruction of the vagina and strengthening of the uterosacral ligaments (1-2) with ATOTs is performed by completely tension-free insertion of two apical tapes in the direction of both uterosacral ligaments. Therefore, during sexual intercourse, tape implants remain far away from the sacrospinal ligaments (outside the penetration line during sexual intercourse), which not only successfully reduces the risk of postoperative dyspareunia, but also reduces the rate of other postoperative complications (for example extrusion of tape material) to rate of TVT-O procedures. The aesthetic advantage of the procedure is provided by one skin incision or a stab wound hidden in the femoral-genital folds on the left and right. Both pairs of transobturator tapes are inserted separately through the same skin incision on the right and left sides, and then are completely separated by a tissue septum, until colpotomy opening under the urethra and under the bladder neck (Fig. 2, 3). It is important that the suburethral and subvesical part of two anterior tapes remain in the medial part connected. This connection is covered by the vaginal wall, which was not interrupted at the anterior colpotomy, which is performed with two incisions. Therefore, the suburethral and subvesical portions of both anterior tapes retain the shape of the tape, and cannot be twisted into a cord until they pass through the inner transobturator membrane and muscle. This provides excellent support to the urethra and eliminates the risk of postoperative stress urinary incontinence in cases of occult urethral insufficiency (3). Transobturator tapes connect both tendon arches and serve as a good anchor for apical tapes that run individually laterally in the paravesical space before being inserted loosely upward, parallel to the uterosacral ligaments (Fig. 2, 3). Vaginal reconstruction by strengthening the sacrouterine ligaments can also be successfully used to support the pelvic organs in the case of a lateral defect to the pubocervical fascia and in the case of damage to the apical cardinal and uterosacral ligaments.

CONCLUSIONS

Apical and anterior vaginal prolapse repair with self-tailored ATOTs and USLA is safe and offers excellent short-term anatomical and functional results.

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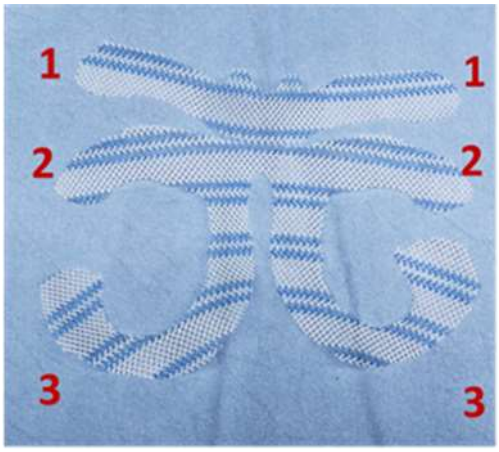

Figure 1. Individually design tape implants.

Figure 2. Two pairs of tapes were inserted transobturatorly

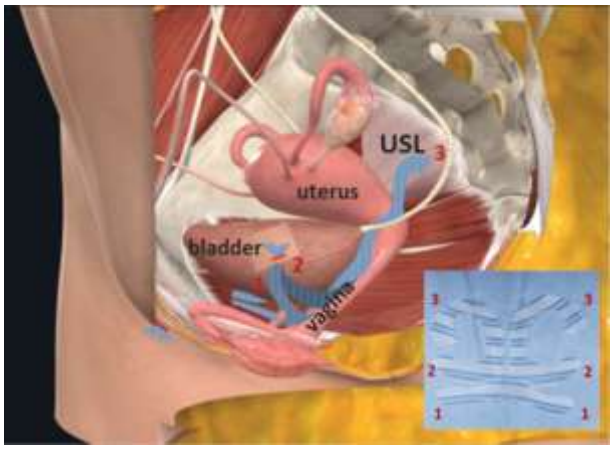

Figure 3. Left apical tape (3) in lateral vesicovaginal space and inserted in the direction of left uterosacral ligament

Table 1. The number of ATOTs + USLA performed for POP correction.

	Vaginal cuff prolapse	Without hysterectomy	With hysterectomy	Together
ATOTs+USLA	5	8	45	58
Median age	64	50	62	61
Range	54-77	42-62	40-79	40-79

49_ep - UST (URETHRA SURROUNDING TAPE) - A MINIMALLY INVASIVE OPERATION TECHNIQUE FOR STRESS INCONTINENCE

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INTRODUCTION AND AIM OF THE STUDY

For over 20 years, TVT (Tension-free virginal tape) 1. has been the “golden standard” for surgical stress incontinence therapy.

Already in 2005, in my paper “Operative Therapie der weiblichen Belastungsinkontinenz” (Operative Therapy of Female Stress Incontinence) published in Zentralbl Gynakol 2006; 128: 117-122, I pointed out the possible complications after TVT and its side effects.

In 2018, due to gynaecological complications TVT operations were banned in Australia, England and America. Nevertheless, it is the merit of Ulmsten that through TVT the renaissance of vaginal surgical stress incontinence began. Up until the mid-1990s, surgical incontinence therapy was depricated.

The effect of TVT is explained by the Integral Theory according to Papa Petros 2. In fact, incontinence is achieved by triggering the urethrovesical reflex 3.

The aim of the study is to promote a minimal invasive surgical method to cure female stress incontinence and to give honour to Ulmsten for his great knowledge.

To date several countries have banned the TVT method as vaginal incontinence therapy due to severe complications and side-effects. UST (urethra surrounding tape) is thus the perfect alternative. UST shows at least as many positive results as TVT, however without any complications and is an absolute minimal invasive operation method.

UST is a time-consuming and manual surgical method, but corresponds to the classic rules of surgery in every phase, and also an operation method that can be reproduced at any time with exactly defined operation results.

MATERIALS AND METHODS

In 2004, 43 patients aged between 34-81 years underwent a UST (urethra surrounding tape) surgery after preoperative clinical, urodynamic and x-ray examination.

As an inclusion criterion, each patient had a preoperative positive stress test and showed subjective discomfort from stress incontinence of every degree, if a massive descensus of the anterior vaginal wall was not existent.

From 2007 to 2010, 16 patients aged between 40-81 years were treated with UST for recurrent stress incontinence. The inclusion criterion was a preoperative clinical examination without a urodynamic and x-ray examination.

A 1,5 x 2,6 cm sized mesh which is sutured onto the mid third of the urethra so that the mini sling results in a moderate impression of the dorsal half of the urethra surface (figure 1). This impression triggers the urethrovesical reflex. After 1 year the patients underwent a clinical and urodynamic post examination. The results of the 43 patients who underwent surgery in 2004 were evaluated. There was also a clinical and telephone follow-up check of the 16 patients who underwent surgery between 2004 and 2010.

Figure 1: A 1,5 x 2,6 cm sized mesh which is sutured onto the mid third of the urethra (photo Lahodny).

RESULTS

In clinical tests a continence rate of 97,7 % was found. After subjective evaluation 83,7% patients were completely cured, 14 % clearly improved. In 2,3 % no improvement was recorded. The depression quotient showed a significant amelioration from 0,67 to 0,47. Furthermore, a descensus of the retrovesical angel β and inclination angel α was found which corresponds to a flattening of the funnel in the bladder base plate. The average duration of an operation was 25 minutes.

INTERPRETATION OF RESULTS

The urethrovesical reflex is released by touching or impression of the dorsal urethra wall. Thus contraction of the bladder neck and the trigonum vesicae with relaxation of the detrusor vesicae muscle is the result. It causes the closure of the bladder neck and suppresses or flattens the funnel formation in the bladder base plate.

This phenomenon can easily be seen in a lateral urethrocystogramme. The preoperative and postoperative x-rays clearly show the changes on the bladder neck and bladder base plate the existence and efficiency of the urethrovesical reflex.

CONCLUSIONS

Precise reproducible operation steps, precisely predictable results, no intra-operative complications, no postoperative complications and excellent results justify the classification minimally invasive incontinence operation technique.

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50_ep - MARKET READINESS FOR CONVERTING FROM REUSABLE, FLEXIBLE CYSTOSCOPES TO SINGLE-USE, FLEXIBLE CYSTOSCOPES IN GERMANY, FRANCE AND THE UNITED KINGDOM

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INTRODUCTION AND AIM OF THE STUDY

Reusable cystoscopes have been associated with time consuming reprocessing, availability issues and deteriorated performance over time which have increased the demand for a single-use solution. This has led to new innovative single-use cystoscopes entering the market to overcome these challenges. In this study, we aimed to assess the perception of single-use cystoscopes and investigate the market readiness for adopting the new single-use technology in the three largest markets in Europe.

MATERIALS AND METHODS

Between February 24, 2020 and March 23, 2020, a total number of 105 urologists performing cystoscopies in both hospitals and clinics answered an electronic survey about their willingness to convert from reusable cystoscopes to single-use cystoscopes. The survey was conducted amongst 35 urologists in Germany, France and UK, respectively. Data were collected using the online survey tool, QuestionPro and analysed in Microsoft Excel.

RESULTS

Among the 105 respondents 12% were female and 88% were male urologists. Among all respondents 71.4% had more than 10 years of experience performing cystoscopy procedures and 13.3% had less than 7 years of experience. Across all three countries, urologists performing cystoscopies would on average convert 46% of their conventional cystoscopies to be performed with a single-use cystoscope instead of a traditional reusable cystoscope. Urologists in the UK would on average convert 50% of their procedures to be performed with single-use cystoscopes, compared to Germany and France who on average would convert 49% and 35%, respectively. Among all respondents, 84.8% were owning all their current cystoscopes, 11.4% had a combination of owning and leasing the cystoscopes. Only 3.8% were leasing all their cystoscopes. There were no significant differences between urologists owning or leasing their cystoscopes and their willingness to convert to single-use. On average 20% of all respondents have often experienced waiting for a cystoscope to become available. Urologists who often have to wait for a cystoscope to become available are significantly more likely to want to convert to single-use cystoscopes instead of reusable cystoscopes ($p=0.005$). Lastly, when urologists were asked about the most important features associated with single-use cystoscopes "availability" ranked the highest (19%) followed by "guaranteed sterility" (17%) and "cost transparency" (15%).

INTERPRETATION OF RESULTS

Results show that urologists are interested in adopting the innovative single-use cystoscope. Especially urologists who often have to wait for a cystoscope to become available are significantly more likely to convert a larger share of their procedures to be performed with single-use cystoscopes. Availability also ranked the highest, when asked about the most important single-use features. Additionally, guaranteed sterility and cost transparency appear to be key-drivers for converting to single-use devices rather than the conventional reusable cystoscopes needing reprocessing, repair and general maintenance.

CONCLUSIONS

This study found that there is an interest amongst urologists to convert from conventional reusable cystoscopes to single-use cystoscopes when performing cystoscopies in both Germany, France, and UK. Additionally, urologists often experiencing availability issues would on average convert a significantly higher share of cystoscopies to be performed with single-use cystoscopes instead of a reusable cystoscope.

REFERENCES (max. 3)

Phan et al., J Endolum Endourol Vol 1(1):e3-e16; April 16, 2018.

51_ep - METHODS OF REPROCESSING FLEXIBLE CYSTOSCOPES AND THE CONCERN OF CROSS-CONTAMINATION AMONG UROLOGISTS IN THE UNITED KINGDOM, GERMANY AND FRANCE

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INTRODUCTION AND AIM OF THE STUDY

Urinary tract infections are the most common adverse events following cystoscopy procedures. Controversies exist regarding the origin of these post procedural infections and whether they can be attributed to contaminated cystoscopes. Limited evidence exists within this area even though more than 70% of all Manufacture and User Facility Device (MAUDE) reports to the US Food and Drug Administration state issues concerning device microbiological contamination and patient infection following a cystoscopy. We aimed to investigate the use of different reprocessing methods at cystoscopy facilities in the three largest markets in Europe and the concern for contaminated cystoscopes and cystoscope-related patient infections.

MATERIALS AND METHODS

Between February 24, 2020 and March 23, 2020 a total number of 105 urologists performing cystoscopies in both hospitals and clinics answered an electronic survey about reprocessing setup and concerns in regards to contaminated cystoscopes and cystoscope-related infection. The survey was conducted amongst 35 urologists in Germany, France and UK, respectively. Data were collected using the online survey tool, QuestionPro and analysed in Microsoft Excel.

RESULTS

Among the 105 respondents 12 (11.4 %) were female and 93 (88.6 %) were male urologists. 75 (71.4 %) reportedly had more than 10 years of experience performing cystoscopies and 30 (28.6 %) had less than 10 years of experience. 23 (65.7 %) urologists operated in hospital settings and 22 (62.9%) used single-use ureteroscopes at the time they answered the survey. The urologists were asked to inform which cleaning process were in use in their urology department. 29 (27.6 %) used high level disinfection (HLD), 28 (26.7 %) used chemical baths, 23 (21.9 %) used sterilization, 2 (1.9 %) used tristal wipes, 7 (6.7 %) did not know which cleaning process were in use and 16 (15.2 %) used another reprocessing method than the ones mentioned here. To estimate the concern for contamination and infection the urologists were asked to anticipate the rate of contamination of their cystoscopes and endoscope-related infections at their department. On average, the urologists anticipated the rate of contaminated cystoscopes and endoscope-related infections to be 5 % and 4 %, respectively. Additionally, findings showed that French urologists were significantly more likely to anticipate a higher contamination rate compared to urologist from Germany and the United Kingdom ($p<0.004$). Finally, 49 (47 %) stated that they were concerned about cystoscopy-related infections as a result of contaminated cystoscopes. There were no statistically significant differences between countries and the likelihood of being concerned about cystoscopy-related infections as a result of contaminated cystoscopes.

INTERPRETATION OF RESULTS

The results show an even distribution in the use of cleaning methods such as sterilization, HLD and chemical baths. Furthermore, 6.7 % of the urologists were not aware of the cleaning method used in their urology department. The results show that almost half (47 %) of the urologists were concerned about cystoscopy-related infections as a result of contaminated cystoscopes. This study highlights the importance of adequate reprocessing of cystoscopes in order to eliminate any concern or possibility of cystoscopy-related infections as a result of contaminated cystoscopes.

CONCLUSIONS

According to the results, urologists in the three largest markets in Europe most often use sterilization, HLD or chemical bath as reprocessing method of reusable cystoscopes. The urologist anticipated the rate of contaminated cystoscopes and endoscope-related infections to be 4-5 %. French urologists are significantly more likely to anticipate a higher contamination rate compared to urologist from the United Kingdom and Germany. Finally, almost half of all the respondents expressed concern about cystoscopy-related infections as a result of contaminated cystoscopes.

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Phan et al., J Endolum Endourol Vol 1(1):e3-e16; April 16, 2018.

52_ep - DOES ADVANCED MATERNAL AGE AT FIRST DELIVERY INCREASE THE RISK FOR PERINEAL TEARS?

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Introduction and aim of the study

During the last two decades, there has been an increase in the rate of women having their first deliveries at advanced age. Moreover, many of these women request to have a cesarean delivery without medical indication, because they are concerned about perineal tears that may damage pelvic floor function and have poor aesthetic results. We aimed to study whether advanced maternal age (AMA) is a risk factor for perineal tears and episiotomies among nulliparous women.

Materials and Methods:

We performed a retrospective cohort study of all nulliparous women with vertex singleton pregnancies, who had normal vaginal deliveries, >24 weeks of gestation, at a single tertiary medical center, between January 2011 and October 2015. Exclusion criteria were operative vaginal deliveries, multifetal pregnancies, and stillbirth. The rates of perineal tears and episiotomies were compared between women with advanced age (≥35) and younger women.

Results:

Overall, 3729 nulliparous women met the inclusion criteria, of whom 228 women aged ≥35 and 3501 women aged <35. Women with advanced age gave birth at lower gestational age and to neonates with lower birthweight (Table). There were no differences between the study groups in the rates of perineal tears or episiotomies. On multivariate regression analysis, after controlling for maternal BMI, diabetes mellitus, gestational age, birthweight, episiotomy, and epidural analgesia, AMA was not associated with any perineal tear (aOR 1.13, 95%CI 0.67-1.94) or severe perineal tears (3rd and 4th degree) (AOR 1.80, 95%CI 0.22-14.6).

Interpretation of results:

Our results are reassuring for advanced aged nulliparous women who have concerns regarding perineal injury during vaginal birth. The limitations of our study are its retrospective design and the lack of long-term follow up.

Conclusions:

Advanced maternal age at first delivery does not increase the risk of perineal tears.

Table. Perineal tears among nulliparous women with advanced age compare to younger nulliparous women

	Group 1 Age <35 n=3501	**Group2 Age ≥35 n=228**	**p-value**
Age, years	26.1 ± 3.7	37.7 ± 2.3	<0.001
BMI, kg/m^2	22.6 ± 4.2	22.8 ± 4.3	0.68
Gestational age at birth, weeks	39.5 ± 1.7	39.0 ± 1.9	<0.001
Birthweight, gr	3187 ± 443	3034 ± 510	<0.001
Epidural anesthesia	2606 (74.4)	168 (73.7)	0.80
Episiotomy	1557 (44.5)	89 (39.0)	0.10
1st degree perineal tears	507 (14.5)	43 (18.9)	0.07
2nd degree perineal tears	394 (11.3)	28 (12.3)	0.63
3rd degree perineal tears	19 (0.5)	1 (0.4)	1.00
4th degree perineal tears	2 (0.1)	0	1.00
Any perineal tear	922 (26.3)	72 (31.6)	0.08
Severe perineal tears (3rd and 4th degree)	21 (0.6)	1 (0.4)	1.00

Data are presented as mean ± SD, or n(%)

53_ep - CASE REPORT SERIES OF UNUSUAL UROLOGICAL CONDITIONS ANTENATALLY AND POSTNATALLY

Davor Zibar *(1)* ***- Susmita Sarma*** *(1)*

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Case 1
Gravida one para zero with no significant medical and surgical history presented to obstetric emergency unit at 24 weeks of gestation with a history of pink vaginal discharge noted after passing urine and on wiping. Upon performing vaginal examination tissue measuring 2 cm was noted exteriorising from the urethra. Macro haematuria was noted upon admission to the hospital. Pelvic ultrasound showed polypoid structure in the urinary bladder. Flexible cystoscopy was performed and 2 cm polyp was noted next to the urethral junction. Histology showed squamous-lined inverted polyp, with some HPV viral features. Patient proceeded to have normal vaginal delivery at term and resection of the polyp was performed postnatally. Repeat surveillance cystoscopy was normal.

Case 2
Gravida two para one with previous vaginal delivery was transferred from a periphery unit at 33 weeks of pregnancy with sudden onset flank pain and clinical picture of acute abdomen. Ultrasound performed showed severe of bilateral hydronephrosis. MRI abdomen was performed and ruptured right ureter was noted. Percutaneous nephrostomy was inserted post emergency caesarean section of healthy preterm baby. Postnatally patient improved quickly and right anterograde ureteric stenting was performed. Patient was discharged home on day 10 and is currently awaiting urology follow-up regarding stent removal.

Case 3
Gravida six para four plus one early miscarriage with a history of caesarean section followed by three vaginal deliveries presented six days after her technically difficult caesarean section for failure to progress . Clinical findings were macro haematuria and severe abdominal pain. CT abdomen was urgently performed, bladder was noted to be distended and blood filled but no uterine or bladder rupture was noted. MRI performed didn't show fistula formation or bladder perforation. Patient was reviewed by urology team and rigid cystoscopy was performed. Grossly inflamed bladder was found and the bladder biopsy showed eosinophilic cystitis. Patient had full recovery and repeat cystoscopy year later was normal.

Case 4
Gravida three para one plus one previous first trimester miscarriage presented three weeks post elective caesarean section with clinical picture of urosepsis.
Antenatally pregnancy started as a heterotopic pregnancy and laparoscopic salpingectomy was performed. Patient had several admissions in second trimester with urinary retention.
On day 3 of postnatal readmission due to the further pyrexia CT abdomen/pelvis was ordered. It showed distended right ureter due to the obstructive stone and radiological picture of pyelonephritis. Urgent percutaneous nephrostomy was inserted. Upon clinical improvement anterograde ureteric stenting was performed. Ureteric stone was removed at the same time. She had full recovery and removal of the ureteric stenting.

54_ep - MANAGEMENT OF URINARY STRESS INCONTINENCE WITH BULKAMID®.

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INTRODUCTION AND AIM OF THE STUDY

Urinary incontinence is a common complaint among women while urinary stress incontinence (USI) affects around 35% of them [1]. Several surgical approaches have managed to offer successful results in controlling the USI symptoms, with mid-urethral slings being one of the most successful and popular method of management.

However, a nationwide pause on all vaginal mesh and tape procedures was declared in response to a public campaign by women who have suffered from complications of vaginal mesh with symptoms such as pelvic pain, dyspareunia and mesh erosion.

Polyacrylamide hydrogel (Bulkamid®) urethral injections are an alternative treatment for the management of USI with success rate of over 80% [2]. It is associated with less complications and risks compared to mid-urethral sling operations.

USI affects up to 45% of women and can lead to significant and debilitating impact on social and psychological health of women. It is underreported and most women seek help much later than when the condition is unbearable.

Our aim was to see:

1. How effective is Bulkamid® is in the treatment of Urinary Stress Incontinence.
2. To see our complication rates.
3. To see if we are managing to perform the cases under Local Anaesthetic.
4. To see if patients are being managed pre-operatively and post-operatively as per British Society of Urogynaecology (BSUG) recommendations.

MATERIALS AND METHODS

A retrospective study was undertaken. 57 patients were identified from the theatre records who had undergone Bulkamid injections from 18/05/2016 to 27/01/2020. This included all cases performed across our medium sized Trust. Three Consultant Surgeons were identified. Patient notes, theatre records and the trust patient database were utilised to obtain the data. A proforma was completed on an Excel spreadsheet.

RESULTS

Three Surgeons performed the procedures across the 2 sites within the Trust, with 88% of the cases undertaken at 1 site. The ages of the patients was between 25-83 years (Mean = 57.4).

The BMIs ranged from 20 to 58 (Mean = 31). 93% of the patients had a BMI of less than 40 and 93% of patients were non-smokers. 100% of patients had physiotherapy pre-treatment. All management plans followed the NICE guidance [3] and British Society of Urogynaecology (BSUG) recommendations.

91% were primary procedures versus 9% that were repeat procedures. 61% of patients had had previous Urogynaecological surgery. This included previous Bulkamid, transvaginal tape, transobturator tape, Birch colposuspension, vaginal hysterectomy, percutaneous tibial nerve stimulation, mesh, botox, anterior and posterior colporrhaphy.

Written consent was undertaken in 100% of cases. Information leaflets were provided in 100% of cases.

65% of cases were performed under local anaesthetic versus 35% of cases that were performed under general anaesthetic.

The median surgical time was 11 to 20 minutes. 58% of cases fell into this range.

There were 0 complications. 77% of patients reported a good outcome at follow up versus 23% who reported no improvement. 100% of patients were followed up post-operatively at 6 to 12 weeks.

INTERPRETATION OF RESULTS

Polyacrylamide hydrogel (Bulkamid®) seems to be an effective way of managing Urinary Stress Incontinence with low complications rates and relatively good rates of patient satisfaction. We managed to have no complications and 77% of patient had a good outcome at follow up.

Bulkamid can be performed under local anaesthetic with relatively short operating times. This reduces both the costs of inpatient hospital admissions and complications associated with general anaesthesia.

All patients were assessed pre-operatively and post-operatively as per British Society of Urogynecology's recommendations.

CONCLUSIONS

Bulkamid® urethral injection is a promising alternative surgical procedure for Urinary Stress Incontinence. It manages to control the symptoms in patients of various ages and BMI's. It is associated with high rates of patient satisfaction and low complication rates. It is easy to learn and it can be performed in the outpatients setting.

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55_ep - SCLEROTHERAPY WITH POLIDOCANOL FOAM AND TRANSANAL MUCOPEXY WITH DEARTERIALIZATION AS TREATMENT FOR REDUNDANT MUCOSAL AND HAEMORRHOIDAL SYMPTOMATIC PROLAPSE: LONG-TERM RESULTS ON 185 PATIENTS.

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Coloproctology Unit Bari 2, Hospital University of Bari, Bari, Italy [(1)]

INTRODUCTION

Haemorrhoidal disease (HD) is one of the most frequent anorectal disorders, defined as the symptomatic enlargement and distal displacement of the normal anal cushions. Typical symptoms of HD are bleeding and prolapse. The main theory regarding the pathophysiology of haemorrhoidal disease suggests the result of abnormal dilation of veins of the internal haemorrhoidal venous plexus, abnormal distention of the arteriovenous anastomosis, with consequent prolapse of the cushions and the surrounding connective tissue. Willis demonstrated that a difference between collagen I/III and collagen/protein ratios could cause the reduction of connective tissue stability, reducing the strength of the cushions. This theory can contribute to the development of HD. Risk factors include constipation, inadequate fibers intake, prolonged lavatory sitting, diarrhoea and pregnancy. According to the guidelines, redundant mucosal and haemorrhoidal symptomatic prolapse belong to the II and III degree of HD and can be treated with several office treatments and/or surgical procedures. Our Coloproctology Unit, as part of the University Hospital of Bari, is a reference centre of Southern Italy for those treatments: Sclerotherapy (ST) with polidocanol foam and transanal haemorrhoidal dearterialization without Doppler. ST is an office technique based on the injection into haemorrhoids of 3% polidocanol foam and induces an inflammatory reaction with sclerosis of the submucosal tissue and consequent suspension of the haemorrhoidal tissue. Transanal haemorrhoidal dearterialization with or without Doppler is a suspensive conservative technique based on an endorectal plication of the redundant and prolapsing mucosa and submucosa, called mucopexy, to treat the prolapse, respecting the anatomical integrity of the hemorrhoidal piles. Doppler-guided dearterialization can be associated to the mucopexy to help the identification of the hemorrhoidal arteries.
The aim of this work is to evaluate the effectiveness, safety, outcome and results of transanal mucopexy without using Doppler and ST as treatment for redundant mucosal and haemorrhoidal symptomatic prolapse.

PATIENTS AND METHODS

In our Coloproctology Unit, 185 patients (pts) were enrolled between 2017 and 2019 and underwent a strict follow-up. All data were collected in Excel database and were used for statistical analysis. 95 pts underwent ST and 90pts underwent transanal haemorrhoidal dearterialization.

SCLEROTHERAPY : A total of 95 patients with symptomatic second- and third-degree HD underwent a single ST. A scale score was used to assess post-operative pain and patient satisfaction. The symptoms severity and anal continence were investigated through a self-reported questionnaire and Vaizey score, respectively, at baseline, at 4 weeks and after 1 year and a half.

Results: 78 out of 95 patients were male (82.11%), and the mean age was 52 (29-78; SD ± 12) years. The mean operative time was 4.5 (2-6; SD ± 1.23) minutes. No intraoperative complications and no drug-related side effects occurred. The overall success rate was 77.89% (74/95 patients) after a single ST session. All patients resumed their normal daily activities the day after the procedures. Recurrences were 17 on 95 pts (17.8%): 6 pts underwent a second ST session, 9 pts underwent a conservative treatment and 9 pts underwent mucopexy and haemorrhoidal dearterialization.

TRANSANAL MUCOPEXY WITH DEARTERIALIZATION 90 patients with symptomatic II-III HD underwent 3 different procedures: A) THD: Transanal hemorrhoidal dearterialization (23 pts – 25,5%), B) THD without Doppler (17 pts – 19%), C) using an endorectal new device called Erode (50 pts – 55,5%). Mean age was 49,7±10,7 years (range = 28,0 – 79,0). Mean operative time was respectively: 65,7 min, 60,3min, 38,4 min. Outcome evaluated by a weekly health diary, reporting pain score (VAS), bleeding, tenesmus and urgency. Follow up in 7 post-operative day (POD), 1-3-6-12-24 and 48 months.

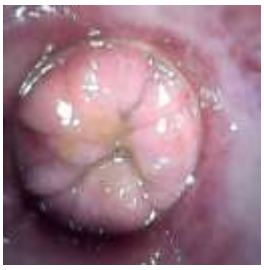
Results: A) pain 4,3±2,5, bleeding 13 pts (56,5%), tenesmus 20 pts (87,0%). B): pain 6,1±2,2 , bleeding 12 pts (70,6%), tenesmus 13 pts (76,5%). C): pain 4,6±2,2, bleeding 22 pts (44%), tenesmus 23 pts (46%). Complications: 1 submucosal abscess, 1 major bleeding, 2 thrombosis. Recurrence data: 2 pts in A (2,2%), 1 in B (1,1%) and 2 (2,2%) in C.

CONCLUSIONS

From the analysis of our data, sclerotherapy with 3 % polidocanol foam and transanal mucopexy with dearterialization represent satisfying treatments for redundant mucosal and haemorrhoidal symptomatic prolapse. ST with 3% polidocanol foam is a safe, cost-effective, painless and repeatable office treatment. The use of this treatment also as a bridge to surgery has a role in our everyday practice. Suspensive mucopexy is safe and effective technique for what concerns outcomes. Therefore, the use of Doppler, which increases mean operative time, does not modify patients' outcome in terms of recurrence. Both techniques are safe, effective, with different surgical indications according to the grade and reported satisfying results in term of outcomes after 2 years follow-up.

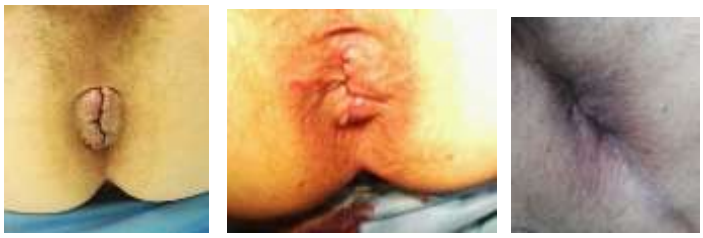
SCLEROTHERAPY TECHNIQUE

SCLEROTHERAPY 1 MONTH FOLLOW UP



TRANSANAL MUCOPEXY WITH DEARTERIALIZATION

Pre-op **Post-op** **Follow up (7th POD)**



56_ep - THE EXTENT OF EXPERIENCING AVAILABILITY ISSUES AND DETERIORATING PERFORMANCE ASSOCIATED WITH REUSABLE CYSTOSCOPES, A MULTICENTRE STUDY

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Ambu A/S, Market Access, Ballerup, Denmark [(1)]

INTRODUCTION AND AIM OF THE STUDY

Almost four million cystoscopies are performed in Europe each year which makes it a high-volume procedure. Investments in cystoscopes are associated with high capital costs (approximately 20,400 EUR per cystoscope). For this reason, it is acknowledged that many facilities use older cystoscopes to avoid large investments in new cystoscopes. However, reusable cystoscopes tend to deteriorate after multiple use compromising image quality and bending performance. In most clinical settings the number of cystoscopes available are limited due to the large investment needed for new ones. Additionally, cystoscopes become unavailable when out for repairs, microbiological testing and reprocessing following a cystoscopy procedure. We aimed to investigate the extent of experiencing availability issues for cystoscopy procedures, the age of the oldest cystoscopes in use and the likelihood of experiencing cystoscopes deteriorating in bending performance.

MATERIALS AND METHODS

Between February 24, 2020 and March 23, 2020, a total number of 105 urologists performing cystoscopies in both hospitals and clinics answered an electronic survey about potential availability issues at their institution and the likeliness of having experienced decreased image quality and deteriorated bending performance. The survey was conducted amongst 35 urologists in Germany, France and UK, respectively. Data were collected using the online survey tool, QuestionPro and analysed in Microsoft Excel.

RESULTS

Among the 105 respondents 12 (11.4 %) were female and 93 (88.6 %) were male urologists. 75 (71.4 %) reportedly had more than 10 years of experience performing cystoscopies and 30 (28.6 %) had less than 10 years of experience. 23 (65.7 %) reportedly operated in hospital settings and 22 (62.9%) used single-use ureteroscopes at the time they answered the survey. To estimate the extent of experiencing availability issues the respondents were asked to rate how often they had to wait for a cystoscope to become available. To this question 20 (19.1 %) reported that they often had to wait, 69 (65.8 %) rarely had to wait and 16 (15.2 %) never had to wait for a cystoscope to become available. There were large differences between countries on how often the urologists had to wait. 12 (34.3 %) of the urologists from the UK reportedly often had to wait for a cystoscope to become available. In comparison only 5 (14.3 %) and 3 (8.6 %) urologists from France and Germany respectively, reported that they often had to wait for a cystoscope to become available. 99 (94.3 %) of the urologists declared how old their oldest cystoscope in use was. The age of the oldest cystoscope in use varied from 1-30 years. Comparing all three countries, the oldest cystoscope in use was on average 5.1 years. Urologists from Germany reportedly had the oldest cystoscopes in use. German urologists reported their oldest cystoscope in use to be on average 8.2 years old. Finally, 79 (75.2 %) of the urologists had experienced that their reusable cystoscope lost image quality or lacked proper manoeuvrability.

INTERPRETATION OF RESULTS

Results show that the majority of the urologist experience availability issues when having to wait for cystoscopes to become available. When comparing the three countries German urologists reportedly had the oldest cystoscopes in use. Reusable scopes are designed to have a shelf-life of approximately 7 years. Most of the urologist (75.2 %) had experienced loss of image quality and lack of proper manoeuvrability. This indicates that reusable cystoscopes deteriorate over time compromising bending performance and image quality.

CONCLUSIONS

This study found that there are large differences in between countries when it comes to how often urologist have to wait for a cystoscope to become available. The results show that urologist from the UK more likely have to wait for cystoscopes to become available compared to urologists from Germany and France. Urologists from Germany were more likely to have older cystoscopes in use compared to urologists in France and the UK. Additionally, the majority of all urologists reported that they had experienced that their reusable cystoscope lost image quality or lacked proper manoeuvrability.

57_ep - SINGLE-INCISION VAGINAL MESH INSERTION FOR RECURRENT VAGINAL VAULT PROLAPSE AFTER RADICAL CYSTECTOMY AND RADICAL HYSTERECTOMY WITH IRRADIATION; A CASE REPORT

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Introduction

The operative management of Pelvic Organ Prolapse in case of female patients after radical cystectomy is extremely challenging, especially in recurrence cases. Currently there is limited data in the literature addressing this issue.

Objective

Hereby we would like to present a vaginal treatment option and outcome of such a case.

Methods

5 month after radical robot assisted cystectomy, due to high grade invasive urethelial cc. (pT4a N0,L0,V0,R0) a 74-year-old , sexually inactive female patient presented to our department with stage 4 enterocele and vaginal vault prolapse. In the medical history 43 years ago radical hysterectomy (Piver 3) was revealed followed by post. operative irradiation and brachytherapy, due to invasive cervical cancer. The patient was non eligible for conservative treatment, and both ring and cube pessary treatment attempts were failed. After informed consent we, performed a colpocleisis, after which the histology of vagina revealed only granulation tissue. After 6 month the prolapse has recurred (3-cm enterocele anterior to the colpocleisis scar). The patient suffered from discomfort and vaginal discharge.

Results

8 months after the initial intervention, we carried out a re-operation with mesh reinforcement. In order to insert the mesh, the hernial sac was opened, the prolapsed intestines were repositioned, and a peritoneal flap was attached retropubically. With this approach we managed to position the graft extraperitoneally. We used an ultralightweight monofilament polypropylene mesh (21g/m^2, HexaPro - A.M.I.) In order to fix the individually tailored, trapeze shape graft laterally safe in the pelvis with i-Stitch® instrument fixation (A.M.I.). Three sutures of 2/0 Prolene were placed on each side of the pelvis in a symmetrical fashion. The firs point of the fixation was the tendinous arch at the ischiadic spine on both sides. The second sutures were fixed in the middle of the tendineus arch and the third point of fixation was the tendineus arch of the pubic bone of both sides. The mesh was ventral fixed with a 2/0 Prolene suture under the symphysis tuberosity and dorsal with a 2/0 Prolene suture to the perineal body. To be able to cover the mesh the bulbospongiosus muscles were sutured together with interrupted 2/0 Vycril sutures. The skin of the Labia minores was sutured with a 3/0 Monosyn running suture. The duration of inpatient stay was 5 days.

Conclusions

The patient after 12 month is symptomless with no sign of recurrence or mesh erosion. Her Patient Global Impression of Improvement (PGI-I) Scale is 1 (very much better).

Figure 1.: Preoperative vaginal ultrasound scan image of the prolapsed vaginal vault (A), and postoperative TVS image of the implanted graft (arrows -B).

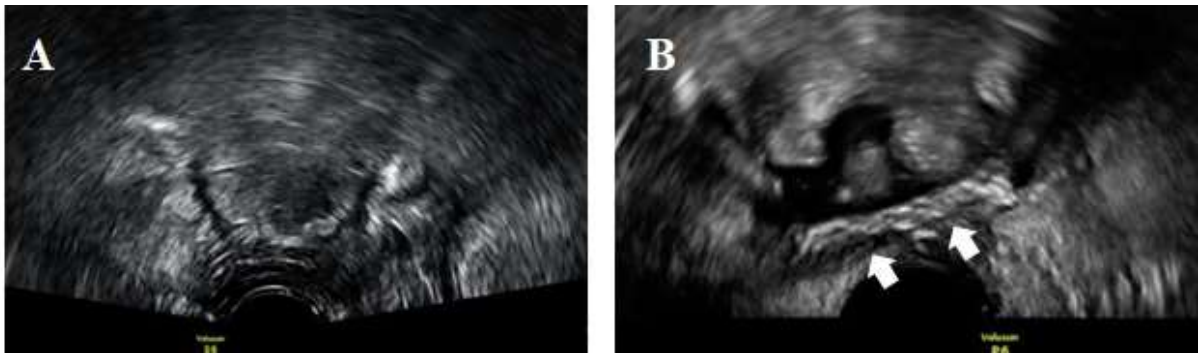
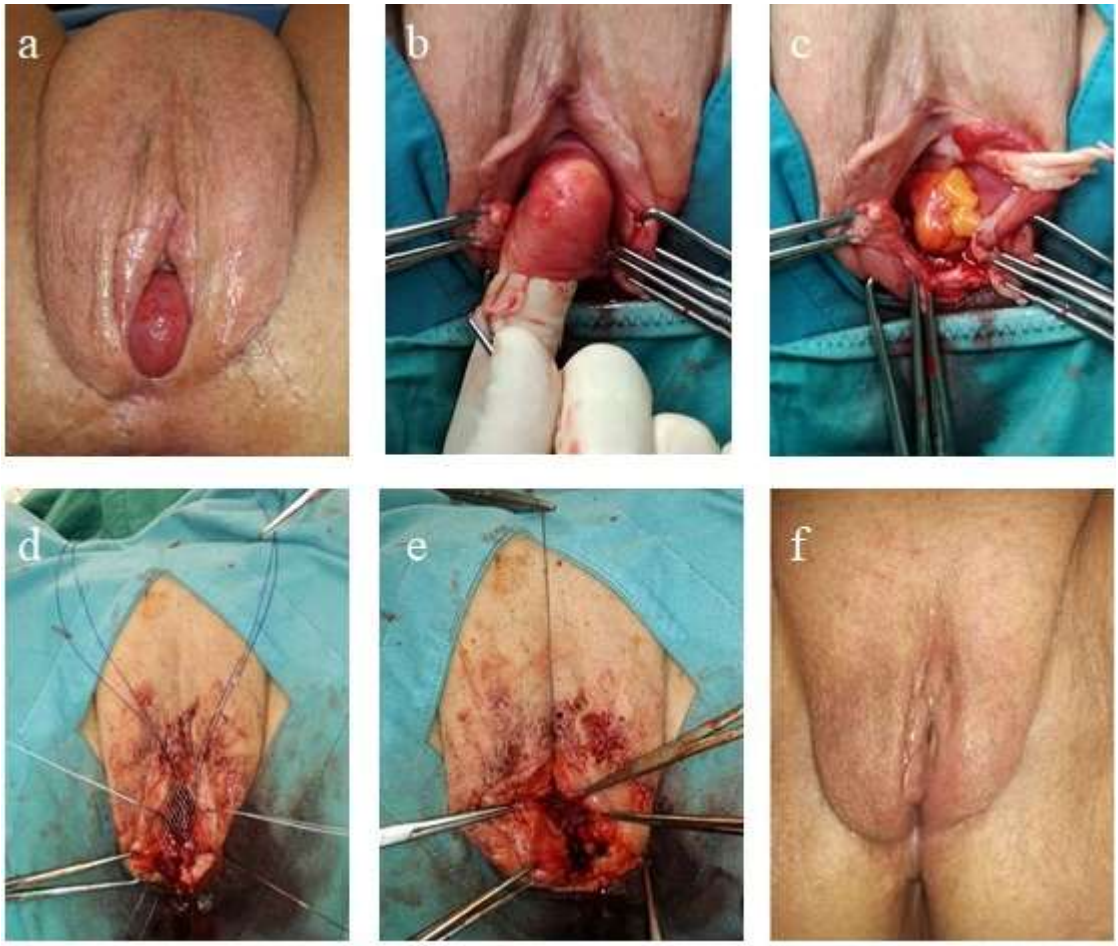


Figure 2.: Step by step demonstration of the operative intervention. Due to a POP-Q Stage III enterocele (a) incision of the peritoneum had been performed (b), which revealed the abdominal cavity (c). It was followed by the insertion a HaxaPro PP mesh graft antero-laterally fixed into the pelvic wall with sutures (d-e). No signs of recurrence after 12 month postoperative (f).



58_ep - POST-OPERATIVE TENSION ADJUSTMENT – A SIMPLE TECHNICAL MODIFICATION IN MID-URETHRAL SLINGS (MUS) FOR STRESS URINARY INCONTINENCE (SUI)

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Abstract: Introduction: Mid-urethral sling (MUS) surgeries have revolutionized the management of stress urinary incontinence (SUI). However, MUS is a delicate balance of tension on the mid urethral segment with a 12% risk of failure to achieve complete continence; and up-to 20% chance of post-operative voiding dysfunction. We propose a simple technical modification in which the long ends of the tape at suprapubic or groin area are not cut immediately and are covered with a sterile dressing. After 48-72 hours post-surgery the patient is checked for continence and voiding difficulties. Following this an ultrasonographic assessment of post-void residual urine is performed. Keeping in mind these 3 criteria the tape is adjusted. After complete subjective as well as objective satisfaction the long ends of tape are cut.

Material and Methods: This is a retrospective analysis of women who underwent MUS surgery for the management of SUI, with our simple technical modification of tape adjustment in the postoperative period. A total of 17 patients operated by single surgeon in one year were included.

Results: Our results show that 58.8% of our patients who underwent MUS procedures required post-operative tape adjustment. The number was significantly higher in the TVT group (85.7%) as compared to the TVT-O group (40%). Three patients in the TVT group required a second time tape adjustment. Following tape adjustment all patients had complete continence (subjective and objective), with no voiding dysfunction.

Conclusion: The incidence of postoperative voiding dysfunction is significant following MUS surgery for SUI. A simple technical modification of delaying the cutting of the tape for two to three days gives the opportunity for perfect tension adjustment.

59_ep - CORRECTION OF THE VAULT PROLAPSE VAGINALLY THROUGH APICAL SLING WITH FIXATION IN THE SACROSPINOUS LIGAMENT: RETROSPECTIVE COHORT OF 20 CASES OPERATED WITH A NEW DEVICE

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INTRODUCTION AND AIM OF THE STUDY

Vaginal Vault Prolapse is a very prevalent defect in the female population and entails a significant loss of quality of life for women worldwide. Historically, various techniques have been devised to address this defect, and remain as a matter of important discussion what the standard technique would be.

The objective of this study is to evaluate the results, objective and subjective, of the a technique to correct the vaginal vault prolapse through the use of Apical Sling with fixation in sacrospinous ligament (AS-FSL) using a new device (SPLENTIS).

MATERIALS AND METHODS

In the national health system, our center is positionated as a reference for surgical gynecological cases receiving patients referred from basic health units on a random basis. We included the patients that we received in the period (2016-2019) that needed vault prolapse correction. A total of 20 patients were included at the study.

With the patient at classic lithotomy position and asseptic procedures, we performed the dissection of the vault prolapse and paravaginal spaces until the sacrospinous ligament. With the rod of the AS-FSL, the harpoons are fixed 0.5 cm from the ischial spine. Through the harpoon wires, a specific sling for vault prolapse was placed and the mucosa was closed with simple suture.

Preoperative data were investigated: age, parity, race, BMI, smoking, menopausal status, use of hormonal medication, presence of urinary symptoms, presence of intestinal symptoms, sexual activity, the surgery of uterus removal and others prolapse surgeries before de procedure. Regarding perioperative data, the presence of complications and concomitant surgeries were evaluated. Postoperative data were evaluated: follow-up time at interview, intestinal symptoms, sexual activity, urinary symptoms, patient satisfaction level via Likert scale, visible prolapse at Valsalva maneuver, grading of the prolapse according to Baden-Walker classification, measurement of POP-Q points and finally asked if the patient would recommend the procedure to a friend.

RESULTS

From the collected results, we obtained as **AGE RANGE**: 50-59a - 5%, 60-69a - 65%, 70-79a - 20%,> 80 - 10%. **FOLLOW-UP** time: <1y - 10%, 1-2 years - 30% ,> 2y - 60%. **RACE**: brown - 45%, black - 10% and white 45%. **PARITY:** nulliparous - 20%, primiparous - 5% and multiparous - 75%. **BMI:** 25-30 - 65%, 30-35 - 25% and> 35 - 5%. **PRIOR SURGICAL**: lapatomic 30%, vaginal 70%. **URINARY LOSS SYMPTOMS** (prior and after surgery)**:** Yes / No - 45%, No / Yes - 5%, Yes / Yes - 10% and No / No - 40%. **SEX LIFE** (prior and after surgery) : Yes / Yes - 15%, Yes / No - 5%, No / No 80%, No / Yes - 0%. **INTESTINAL SYMPTOMS** (prior and after surgery): Yes / Yes - 15%, Yes / No - 5%, No / Yes - 0%, No / No - 80%. **DEFECT APPEARANCE DURING VALSALVA**: Yes - 5%, No - 95%. **BADEN-WALKER CLASSIFICATION** - 0 - 30%, I - 45%, II - 20%, III - 0%, IV - 5%. **TOTAL VAGINAL LENGTH**: Up to 4 cm 15%, 4.1-5.0cm - 20%, 5.1-6.0cm 15% and> 6cm - 50%. **POINT C**: +8-5%, -2-5%, -3-35%, -4-5%, -5-10%, -6-5%, -7-5%, -8-5% and -9-5%.

INTERPRETATION OF RESULTS

The data collected in this study showed an age range above the average in other studies, which is relevant since the main risk factor for prolapse is age. The minimum follow-up was three months, but 60% of the patients were followed up for more than 2 years, which gives us a good view of the long-term results.

The prevalence of obesity and multiparity was very similar with the previous literature, confirming the role of these two risk factors. The evaluation of previous surgeries demonstrated an important prevalence of the vaginal route of removal of the uterus, according to what was already observed in the literature.

The evaluation of concomitant surgeries was very important, with 60% of the patients receiving some type of procedure, the most common being the Sling TOT, anterior and posterior colporrhaphy, in line with the vision of specific site correction of our center. These concomitant surgeries influenced the overall results of the procedure and are considered by us to be necessary in the treatment of any vaginal prolapse.

Only one patient needed surgery after the procedure, with total prolapse recurrence. This patient in question had the correction performed by laparoscopy with excellent satisfaction rates (9.5) after the surgery. It is important to note that some patients had partial maintenance of cystocele and rectocele, but none of them indicated surgical correction. It is also important to note that there was no case of tape extrusion

A satisfactory sex life is part of the human being's well-being and is the result of much concern and attention in vaginal procedures. Unfortunately in our study 16 patients (80%) had not had sexual activity for more than 2 years with 87.5% reporting that the problem was due to the lack or impotence of the partner. Of the 4 women who had previous sexual activity, all continue to have it, with only 1 reporting worsening.

In the assessment of the defect exceeding the introitus during the Valsalva maneuver, only the patient with recurrence obtained this outcome. When Baden Walker was used, we obtained 30% of the patients with complete correction of the defect and 45% of the patients with only grade I BW, indicating a good result. As for POP-Q, we had more than 2/3 of the patients reaching values greater than -5cm from CVT, which is a result close to the length of the normal vagina and 50% of the patients with point C above -5cm, both being considered satisfactory results.

Finally, and most importantly, the satisfaction assessment via the Likert scale reached an average score of 9.25 and, except for the patient with recurrence, all would indicate the procedure to a friend. With that, we verified an important satisfaction with the procedure.

CONCLUSIONS

It has been demonstrated, within the limitations of the small number of patients and single treatment center, that surgical repair of the vault prolapse can be performed vaginally through the Apical Sling safely, with satisfactory results and reduced length of stay.

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60_ep - PRINCIPLE CONSIDERATIONS FOR SURGICAL STRESS INCONTINENCE AND DESCENSUS THERAPY

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Introduction and aim of the study

Due to changeable and inglorious treatment methods of stress incontinence and descensus in the past, appropriate and goal-oriented measures need to be taken.

Eventhough since 1975, the “golden standard” for incontinence therapy has changed 5 times, in 2020 we still do not have a clear concept to treat stress incontinence. To date descensus treatment still doesn´t have successful surgical procedures. For both incontinence as well as descensus the recurrence rate lies with over 30 %. Previous philosophies initially used initially the simplest surgical way. The next severe therapeutic step is used after failure.

The aim of this study is to implement my philosophy, which enables a permanent cure of incontinence and descensus with the first operative step.

The requirements for the operative implementation is available as a perfect surgical method to be used by every urogynecologist. Both the anatomical basics and the surgical techniques have been worked out to the smallest detail.

Material and Method

In the time between 1979 and 2020, over 15 000 successful incontinence surgeries using a short-arm sling plasty and over 10 000 levator plasties were performed at least by myself.

UST (Urethra Surrounding Tape) was used 59 times as the primary operation method for all severity degrees of stress incontinence associated with moderate forms of descensus and also as a recurrence operation.

Based on scientific knowledge and many years of application experience, there are only two functionally and anatomically valid possibilities to treat stress incontinence:

1. Elevation of the bladder neck to its original position by using a short-arm sling plasty (1,2). In doing that vaginally the ligg. urethrotendinea and the ligg. pubourethralia posteriora are sutured suburethrally by a short-arm sling plasty or a double sling plasty. In this way the bladder neck is elevated to the height of the arcus tendinous fasciae pelvis. Thus, a horizontal bladder base plate results and is able to contract. So a retrovesical angle of about 90 % comes into existence, a further proof for continence.

2. Releasing of the urethrovesical reflex by UST (Urethra Surrounding Tape). This reflex contracts the bladder neck and relaxes the detrusor vesicae muscle.

   Based on anatomical investigations and surgical treatments, there is only one effective procedure for durable healing of every degree of descenus:
   Ventral levantor plasty.
   To treat severe descensus and prolapse cases, the only one successful procedure is the closing of the large hernal opening in the minor pelvis. By suturing of the ventral levantor

muscle fibers the hernal opening is closed. In general surgery, each hernal opening is closed by muscle - facia or meshes. The sole suturing of the paravaginal connective tissue never creates a permanent hernal opening closure.

Result

By using the short-arm sling plasty a healing rate of 85 % is achieved. The subjective incontinence cure rate when using the UST method is 83,7 %, the clinical cure rate is 97,7 %. The descensus cure rate after ventral levator plasty amounts to 97 %.

Interpretation of the results

UST is able to provide the same cure rate compared to TVT or TOT however without any complications.

The short-arm sling plasty is able to cure incontinence restoring the original anatomy.

The muscular closure of the hernal opening of the minor pelvis reflects the surgical principles and is a complex operation method without postoperative complications.

Conclusion

As TVT and similar methods have been banned in many countries, UST would be the best technique to treat all degrees of stress incontinence unless there is no severe degree of descensus of the anterior vaginal wall.

UST is the minimally invasive incontinence therapy of the future because the patients have no perioperative complaints, they don't suffer from complications and have no side effects.

The short-arm sling plasty is anatomically and functionally the most successful surgical incontinence operation for descensus or prolapse.

The ventral levator plasty as a hernal opening closure is considered as standard procedure for every kind of severe descensus or prolapse.

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61_ep - IS ENDOANAL ULTRASOUND ACCEPTABLE TO WOMEN AFTER ANAL SPHINCTER INJURY?- A SURVEY OF PATIENT SATISFACTION.

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INTRODUCTION AND AIM OF THE STUDY

Anal sphincter injury continues to be a cause of morbidity to women and the importance of recognition, good repair and follow up has been highlighted in previous studies. The Royal College of Obstetricians and gynaecologists (R.C.O.G) have highlighted the need for studies into patient acceptability of endoanal ultrasound and its interpretation in detecting anal sphincter defects after the primary surgical repair (1).

Endoanal ultrasound is a skill that requires specialist training due to the medico-legal and long term impacts that a poor outcome after an anal sphincter injury can have. Therefore not many medical professionals have the necessary training to be able to set up the service which provided at Royal Hampshire Hospitals.

This study looks at the experience of women who have attended for an endoanal ultrasound at Royal Hampshire Hospitals to look at the acceptability of this invasive procedure to women, and their overall experience of the process.

MATERIALS AND METHODS

A patient satisfaction questionnaire with a mixture of closed and open questions was designed and the patient was asked to fill it in at the end of her appointment. The results were then collected into an excel spreadsheet and the data analysed into graphs. A total of 18 women filled in the questionnaire.

RESULTS

All the women reported not feeling embarrassed at the scan, getting enough privacy, and that they would consent to have another endoanal ultrasound again if required.

INTERPRETATION OF RESULTS

Some of the free comments made by the women include that they would have liked some more information about the scan prior to attending, however, majority had not read about the scan prior to arrival.

CONCLUSIONS

Endoanal ultrasound has a 100% acceptance rate at our facility. We aim to further improve the service and patient satisfaction by improving the quality of the information that patients receive prior to attending for their scan.

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62_ep - EVIDENCE OF A COMMON PATHOPHYSIOLOGY OF STRESS AND URGENCY URINARY INCONTINENCE IN WOMEN

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INTRODUCTION AND AIM OF THE STUDY

Urinary incontinence in women is commonly categorized as stress urinary incontinence (SUI) and urgency urinary incontinence (UUI). SUI occurs due to an increased intra-abdominal pressure caused by an unstable anatomical outlet of the bladder and can be successfully treated surgically.
UUI, a combination of a symptom (urgency to void) and urinary incontinence, is considered to be caused by a neurological dysfunction of the bladder. Current treatment options aim on the reduction of urgency symptoms, but effects on restoration of continence are less impressive. However, surgery for pelvic organ prolapse reduction lead to can cure UUI, indicating an anatomical etiology. We hypothesize that physical stress also causes UUI.

MATERIALS AND METHODS

Patients with UUI symptoms were asked to specify exactly when (in which body position) they involuntary lose urine after the feeling of urgency to void.

RESULTS

In total, 569 patients were evaluated between 2012 and 2020. Overall, 96% of the patients lost urine when they got up from a sitting position on their way to the toilet. Of the study patients 3% lost urine already in the sitting position when they felt the urgency to void.

INTERPRETATION OF RESULTS

A total of 96% of patients with UUI lost urine when they stood up to walk to the toilet. As long as they continued to sit, they did not lose urine.

CONCLUSIONS

Therefore, incontinence in these patients is probably caused by an anatomical instability of the urethro-vesical junction under pressure.

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1_V - LAPAROSCOPIC BILATERAL UTEROSACROPEXY (LAUSA): ADVANCEMENT OF A NEW TUNNELING TECHNIQUE WITH UTERUS PRESERVATION

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INTRODUCTION AND AIM OF THE STUDY

Prolapse of the uterus in premenopausal women is a concerning condition and therapeutic options are limited especially if uterine preservation is demanded.

We present a newly developed laparoscopic surgical technique to restore apical suspension in case of uterine preservation. A curved tunneling device was used to replace both uterosacral-ligaments (USL) and, thereby, the peritoneum´s integrity was preserved while a minimum amount of alloplastic tape (polyvinylidene-fluoride, PVDF) was used.

MATERIALS AND METHODS

Women with apical prolapse and urinary incontinence were referred to our tertiary unit. The patients have failed or declined conservative management none of them had undergone previous urogynecological surgery.

For laparoscopic uterosacropexy, a pneumoperitoneum was conducted according to institutional standards.

1. The bladder was identified on the anterior cervix and their peritoneum was incised laterally until the left and right uterine vessels were displayed. The space lateral to these vessels was prepared blunt. Thereby, the integrity of the posterior paracervical peritoneum was obtained.
2. The peritoneum over the promontory was incised for 2 cm on the right side of the rectosigmoid colon in order to prepare both lateral margins of the promontory for posterior fixation;
3. For USL replacement, a PVDF-structure of 9.3 cm in length and 4 mm in width was used. A semi-circular curved hook was used for insertion.
4. The semi-circular tunneler was inserted via the right lateral trocar incision. The rectosigmoid is lateralized to the left and the tunneler´s blunt tip placed in front of S1 at the left side of the sacral vertebra and hold in its position. In order to tunnel the left USL, the rectosigmoid is pulled to the right side and the tunneler´s blunt tip was slightly rotated forward until the tip shined through the peritoneum (below the left internal iliac vessels, ureter and lateral the rectosigmoid meso). The tunneler was then forwarded under the peritoneum along the run of the left USL toward the cervix, paracervical. The lateral end of the PVDF-structure was threaded through the hole of the tunneler´s tip, and then carefully pulled back. Same was done to tunnel the right USL.
5. The central fixation part of the PVDF-structure was sutured horizontally to the anterior cervix by using 2 interrupted nonabsorbable sutures.
6. Each arm of the PVDF-structure was attached (at the allocated mark) with 3 titanium helices to the right and left lateral prevertebral fascia of S1 by using a fixation device.

RESULTS

Apical support was restored in all 10 patients as well as continence. No intraoperative complications like major vessel or ureter injury and bowel or bladder lesions occurred. Blood loss was less than 20ml per patient. Within mean follow-up of 13 months no mesh erosions or relapse of prolapse were detected.

INTERPRETATION OF RESULTS

The results of this study depict the laparoscopic uterosacropexy with bilateral uterosacral ligament replacement as one approach in women with apical prolapse and urinary incontinence under uterine preservation.

CONCLUSIONS

Restoration of apical prolapse under uterine preservation was achieved by bilateral USL replacement. This was technically achieved using a semi-circular tunneling device in order to preserve the integrity of the USL, uterus, and uterine vessels with a minimum amount of alloplastic material.

2_V - TREATMENT OF RECURRENT UTI AND BLADDER PAIN WITH CYSTOSCOPIC RESECTION OF SQUAMOUS METAPLASIA

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Introduction

We present a case study demonstrating a novel cystoscopic approach to the treatment of recurrent urinary tract infection (UTI). UTIs are a common infection with symptoms of dysuria, frequency, urgency, suprapubic pain or haematuria. Recurrent UTIs is most commonly described as at least two episodes of symptomatic infection with pyuria or positive urine culture in 6 consecutive months or three infections in the past 12 months.

UTIs are traditionally treated with antibiotics and prolonged courses of prophylaxis may be prescribed in patients with recurrent UTI. However with the growing concerns of antibiotic resistance and the era of antibiotic stewardship alternative effective approaches to recurrent UTI treatment are needed.

Patients with recurrent UTI often have 'trigonitis at cystoscopy'. This is a poorly defined term but is associated with non-keratinising squamous metaplasia accompanied by minimal to severe degrees of inflammation, oedema or cystic changes of the urothelial and lamina propria [1]. Non-keratanising squamous metaplasia at the trigone however is a common finding at cystoscopy and often warrants no further management [2,3].

Cystoscopic resection of trigonitis or squamous metaplasia is a novel treatment approach..

Design

This is a case presentation of a 39 year old female presenting with a 1 year history of recurrent UTI. She had had ten culture positive UTIs in this year. Prior to the procedure she was experiencing regular dysuria, urinary frequency and urgency and three episodes of nocturia. Urinary tract ultrasound was normal.

She has been treated with repeated courses of oral antibiotics and trialled a 3 month prophylactic course of antibiotics. The frequency of UTI was not improved with this treatment. The patient has no other PMHx.

The patient underwent trans-urethral cystoscopic resection of trigonitis and squamous metaplasia under general anaesthesia. Pre-operative urine analysis was carried out to exclude active UTI. Prophylactic gentamicin was administered at the start of the procedure. The bladder was distended using glycine. A monopolar cysto-resectoscope was used to resect or peel away the squamous metaplasia layer from the trigone. The resected sample was removed from the bladder by trapping the specimen between the loop and the cystoscope and removing the cystoscope from the bladder. Fulgaration was carried out for haemostasis and treatment of areas with increased vascularity over the trigone. The bladder was emptied and refilled 3 times to ensure adequate haemostasis.

Post-operatively the patient continued oral antibiotics for 6 week. Fosfomycin 3mg on alternate days was given for two weeks followed by 4 weeks of co-amoxiclav 625mg TDS. These antibiotics were selected based on patient tolerance and previous urine culture sensitivities.

Results

Trans-urethral resection of the squamous metaplasia as demonstrated in the video lead to resolution of dysuria, nocturia and bothersome urinary frequency. In the following 6 months after completing this treatment the patient had had no further urinary tract infections.

Conclusions

Transurethral resection of trigonitis and squamous metaplasia can treat recurrent UTI with improvement in associated persistent lower urinary tract symptoms. The presence of non-keratinising squamous metaplasia should not be dismissed in symptomatic patients particularly if additional appearances of oedema, increased vascularity or cystic changes are visible.

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3_V - NOVEL HYSTEROPEXY TECHNIQUE: SACROUTERINE TAPE SIMULATION

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INTRODUCTION AND AIM OF THE STUDY

Abdominal or minimally invasive sacrohysteropexy are the standard reference procedures for apical and multicompartment prolapse (1). However, these procedures require advanced suturing and dissection skills and are associated with complications such as mesh exposure, dyspareunia, ileus, de novo bowel dysfunction, and intraoperative bladder or intestine injury (2). A feasible and minimally invasive technique to correct apical and concurrent apical and anterior vaginal wall defects is presented here, the advantages of which include a minimal mesh load, short operation time and anatomical results that mimic normal support

MATERIALS AND METHODS

The presented operation is performed in two phases, consisting of an initial vaginal surgery followed by a laparoscopic approach. The steps of the procedure are as follows:

1. An anterior 2-cm long transverse incision to the anterior cervicovaginal junction and dissection of bladder
2. Posterior colpotomy
3. Insertion of mid-urethral sling tape into the cervix
4. Free arms of tape are inserted into the peritoneum via posterior colpotomy.
5. Two arms of tape is passed from the tunnel parallel and medial to a sacrouterine fold formed by a modified semicircular disposable grasper inserted directly through a suprapubic incision under the view of a laparoscope.
6. Fixation of the tape is fixed to the sacrum bilaterally to suspend the uterus with mild tension.

RESULTS This hysteropexy technique has been successfully performed on 25 patients with primarily apical uterine prolapse, with no intraoperative and early postoperative complications. Concomitant anterior colporrhaphy, posterior colporrhaphy and perineoplasty were performed when required. The tape can be inserted into the cervix in 10–20 minutes and the laparoscopy procedure can be completed in 20–30 minutes.

CONCLUSIONS

This novel hysteropexy technique is an easy, feasible and minimally invasive way to correct primarily apical or multicompartment defects with the advantages of a minimal mesh load, short operation time and anatomical result that mimics the normal sacrouterine ligament.

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Figure 1: Type 1 macroporous monofilament polyprolene tape designed for transobturator tape procedure. (Betamix® BSS Vaginal Tape System, Betatech Medical Corporation, Istanbul, Turkey). Standart sizes of 40 cm length, 1 cm width were used.

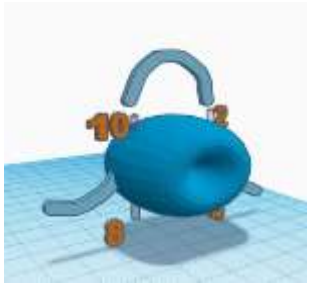

Figure 2: Three dimensional illustration showing uterine cervix and route of mesh inserted to cervix. The mesh is inserted through the cervix from 8 to 10 way in right and from 2 to 4 way in left with the help of a clamp.

Figure 3: The manually bended disposable disposable clinched grasping forceps to form a 15-cm diameter semicircle (Covidien, Mansfield, MA, USA).

4_V - ONE-YEAR OUTCOME AFTER BILATERAL CERVICOSACROPEXY - COMPARISON OF OPEN ABDOMINAL AND LAPAROSCOPIC SURGICAL TECHNIQUES

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INTRODUCTION AND AIM OF THE STUDY

Laxity of the anterior vaginal wall leads to the funnelling of the bladder neck and triggering inappropriate micturition reflexes and thus might lead to urinary incontinence. In the upright body position the anatomical support of the anterior vaginal wall (on which urethra and bladder base rest) is mainly ensured by the cervix / uterus, thus an intact apical suspension is mandatory.

Comparison of clinical outcomes on urinary incontinence and apical fixation between standardized open abdominal and laparoscopic uterosacral ligament replacement (USL) using polyvinylidene-fluoride tapes at 1-year follow up.

MATERIALS AND METHODS

Retrospective analysis in a tertiary center of women with POP-Q stages I-IV and urinary incontinence. All patients received a standardized bilateral uterosacral ligament replacement using polyvinylidene-fluoride tapes either open abdominal or laparoscopically. Clinical outcome was assessed at 4 and 12 months, pelvic organ prolapse was done according to the POP-Q system, urinary incontinence symptoms were assessed with validated questionnaires (ICIQ-SF).

RESULTS

145 patients were evaluable, 75 patients were operated with the abdominal, 70 patients with the laparoscopical approach. The USL could be replaced with both surgical approaches. No major complications occurred intraoperatively and no mesh erosions were detected within 1-year postoperatively. There was no significant difference in clinical outcome one year after surgeries. Apical support (POP-Q stage 0) was restored in 100% of patients and urinary continence restored in 59% of patients (59% after laparotomy vs 62% after laparoscopy, respectively). Patients operated laparoscopically had shorter operation time, shorter hospital stay, and faster recovery compared to patients operated open abdominally.

INTERPRETATION OF RESULTS

The results of this study contribute to support the laparoscopic approach when performing a bilateral cervicosacropexy in order to strengthen the vaginal apex and thereby the anterior vaginal wall.

CONCLUSIONS

Clinical outcome was equally effective between both surgical approaches. Nevertheless, a shorter operating time and faster recovery with no major intraoperative complications favor the laparoscopic surgical technique.

5_V - REFRACTORY STRESS URINARY INCONTINENCE TREATMENT WITH AUTOLOGOUS PUBOVAGINAL SLING

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INTRODUCTION AND AIM OF THE STUDY

Patients with recurrent or persistent stress urinary incontinence after previous surgery represent a challenge. The choice of the next surgical technique depends on a multitude of factors, and there is little literature on the results of these procedures.

MATERIALS AND METHODS

The video shows the placement of a pubovaginal sling from the anterior rectus abdominis fascia.

The clinical case, the surgical decision and the intervention performed are detailed, explaining the functional results obtained.

RESULTS

64-year-old woman with a history of 1 eutocic delivery, followed up for urinary incontinence. She underwent surgery in 2000 implanting a retropubic tension-free suburethral mesh. In a case of late recurrence of incontinence, a transobturator suburethral mesh was placed in 2016. Subsequently, a mesh section was required due to voiding difficulties.

The patient consults again for persistent urinary incontinence. On examination, leakage of urine was observed with minimal effort with a fixed urethra, not presenting any prolapse. A urodynamic study demonstrates stress incontinence. It was decided to perform a pubovaginal sling with anterior rectus abdominis fascia.

Using a Pfannenstiel incision, a 15 x 2 cm anterior rectus fascia strip is isolated. After preparation of the sling, by means of an inverted U vaginal incision and a correct dissection, the sling is fixed at the level of the bladder neck and proximal urethra. The ends of the sling are passed retrogradely into the suprapubic space where they are sutured without tension. Bladder perforation is ruled out by cystoscopy.

The intervention was completed leaving a bladder catheter, vaginal pack, and a suprapubic catheter, which were removed at 48 and 96 hours, respectively, after verifying the absence of post-void residue.

One year after surgery, the patient urinates without difficulty, has no residue and is completely continent.

INTERPRETATION OF RESULTS

This patient represented a challenge for us because of multiple previous surgeries without achieving good results. In this case, this surgery has been effective without complications, and we think the technique is reproductible and a good option to have in mind for surgeons who are familiarized with retropubic approach.

6_V - VESICO-VAGINAL FISTULA AFTER CERVICAL CERCLAGE- LET'S MAKE THE REPAIR SIMPLER

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INTRODUCTION AND AIM OF THE STUDY

Vesico-Vaginal fistulae (VVF) remain the most prevalent genitourinary fistula detrimentally impacting quality of life. The management of pin-point high-riding vesico-vaginal fistulas may present a few challenges: diagnostic difficulties, choosing optimal repair timing, correct approach and surgical technique.

In this video we demonstrate the maneuver that simplifies and makes the repair safer during Fistuloplasty in selected patients.

MATERIALS AND METHODS

26 years old woman with prior history of cervical cerclage with a complaint of vaginal urine leakage in the past 8 months was diagnosed with VVF.

The video shows the procedure step by step, a Foley catheter is passed through fistulous tract from vaginal orifice following the fistulous tract into the bladder. The role of the catheter during traction, is to improve exposition of fistulous area and facilitate and make safer the bladder wall fixation.

RESULTS

3 patients underwent successful repair of narrow high riding VVF using this technique.

CONCLUSIONS

We suggest this maneuver may be a useful tool in a reconstructive surgeon's armamentarium.

7_V - LAPAROSCOPIC HYSTEROSACROPEXY – MINIMALLY INVASIVE TECHNIQUE OF PELVIC ORGAN PROLAPSE WITH APICAL DEFFECT TREATMENT

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INTRODUCTION AND AIM OF THE STUDY

Pelvic organ prolapse can occur with different manifestations depending on the location of the damaged structure. An apical defect, concerns de Lancey's Level I , with cardinal-uterosacral ligament complex damage. According to our research it occurs in 72% of pelvic organ prolapse as the main or co-existing cause of cystcoele. Laparoscopic hysterosacropexy is targeted treatment of pelvic organ prolapse with apical defect. Using polypropylene tape, and dedicated *Neymeyer* helix inserted directly through the abdominal wall , the cardinal-uterosacral ligament complex is reconstructed, restoring the suspension of the cervix and upper third of the vagina. The aim of the study is to demonstrate the technique of minimally invasive , laparoskopic management of pelvic organ prolapse with apical deffect.

MATERIALS AND METHODS

The film demonstrates a step-by-step surgical technique with a commentary explaining subsequent activities and highlighting anatomical landmarks and difficulties .

RESULTS

In years 2015-2019 we have performed 154 hysterosacropexies for apical defect treatment, with at least 6 months observation period. The frequency of relapses is less than 4.5% in our material.

INTERPRETATION OF RESULTS

Laparoscopic hysterosacropexy is highly effective and minimally invasive method of apical defect treatment. Laparoscopic access minimizes the tissue damage and lets the operator to localize precisely anatomical structures.Tissue preparation is limited to the minimal amount. Using Neumayer's helix the operator is able to reconstruct damaged ligaments imitating its physiological anatomy, avoiding extensive preparation of the peritoneum. Polypropylene mesh is covered with peritoneum. This prevents any irritation to surrounding tissues (i.e. intestines). Hysterectomy is either not necessary nor recommended.

CONCLUSIONS

High efficiency of surgical treatment of POP is guaranteed only by causal management.The surgery treatment technique should be chosen depending on the type of defect. Hysterosacropexy is a minimally invasive and effective method of repairing an apical defect, one of the most frequent causes of POP. Laparoscopic access minimizes tissue trauma, blood loss and ensures rapid recovery.

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