PREOPERATIVE MUCP AND VLPP MAY NOT PREDICT MID-TERM OUTCOME IN PATIENTS WHO UNDERWENT TRANSOBTURATOR MID-URETHRAL SLINGS (TOT)

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INTRODUCTION AND AIM OF THE STUDY

To test the hypothesis that preoperative Maximum Urethral Closure Pressure (MUCP) and/or Valsalva Leak Point Pressure (VLPP) may predict mid-term (3 years) outcome of trans-obturator out-in (TOT) mid-urethra slings for female stress urinary incontinence (SUI).

MATERIALS AND METHODS

Fifty-nine patients (mean age 58 ± 9; range 42-79 years) with SUI were prospectively enrolled in the study and underwent TOT. The pre-operative work-up included a detailed case history, clinical, neurological and urogynaecological examination using the Half-Way system and POP-Q system classification. All patients underwent a stress test in the supine position at physiological maximum bladder capacity and urodynamic assessment. Urethral hypermobility was evaluated by perineal ultrasound. Urinary incontinence was classified as recommended by the International Continence Society (ICS) and graded according to the Ingelman Sunderberg classification. All patients completed two short-form validated questionnaires: the Urogenital Distress Inventory (UDI-6) and the Impact Incontinence Quality of life (IIQ-7). Post-operative patient satisfaction was scored by a VAS scale from 0-10, on which 10 was the maximum satisfaction and 0 no satisfaction. They were followed-up at 3, 6, 12 months post-operatively and then annually for primary outcome variables (dry or wet) and secondary outcome variables (UDI-6, IIQ-7 and VAS scale changes). Preoperative MUCP and VLPP, stratified as □ or > 40 cmH_20 and □ or > 60 cmH_2O respectively, were correlated with primary and secondary outcome variables.

RESULTS

The mean follow-up was 30 ± 1,6 months (range 12-55). When patients were analysed according to MUCP stratification, 24 (40.6%) patients showed a MUCP > 40 cmH2O and

35 (59.4%) patients had a MUCP □ 40 cmH2O, while according to VLPP stratification, 39 (66.1%) patients showed a VLPP > 60 cmH2O and 20 (33.9%) patients had a VLPP □60 cmH2O. The overall objective cure rate was 71.18% (42/59); 12 patients, who were wet, reported, however, to have improved. The objective cure rate was: 75 %(18/24) for patients with MUCP > 40 cmH2O and 68.6% (24/35) for those with MUCP □ 40 cmH2O; no statistically significant difference was recorded (p = 0.808). The objective cure rate was 75.3 % (29/39) for patients with VLPP > 60 cmH2O and 65% (13/20) for those with VLPP □60 cmH2O (p = 0.654). No significant differences in objective cure rates emerged when patients were matched for MUCP and VLPP (p = 0.956). No statistically significant changes were recorded for secondary outcome variables (UDI-6, IIQ-7 and VAS scale) when patients were stratified according to MUCP and/or VLPP.

DISCUSSION

The present study seems to indicate that preoperative MUCP and VLPP have no bearing on outcomes after mid-urethral slings as treatment of SUI because when patients were stratified for pre-operative MUCP or VLPP values we found no difference in cure rates. Although most surgeons recognize that outcome assessment tools are often debatable, the issue assumes marked significance after operations that are designed to decrease the impact of specific signs and symptoms such as incontinence, and outcomes are correlated with preoperative outcome predictors at urodynamics. In the present study we tried to address issues related to outcome after mid-urethra sling placement and validation of MUCP and VLPP as an objective parameter for assessing outlet region function, using established, generally accepted criteria. However, increasing evidence suggests that urodynamic findings, patient's condition and specific quality of life could be dissociated. Although studies reporting urinary incontinence as outcome and analyzing outcome predicting factors can never develop the level of evidence seen for other symptoms or disease states such as oncologic outcome reporting, investigating pre-operative predictive factors remains mandatory so as to avoid over- or mis- use of mid-urethra slings and to improve quality of care.

CONCLUSION

These data seem to show that outcome was not associated with preoperative MUCP (□ or > of 40 cmH20) and/or VLPP (□ or > of 60 cmH20) and cast doubts on the predictive value of MUCP and VLPP in patients who underwent TOT.

STRESS URINARY INCONTINENCE AND OTHER LOWER URINARY TRACT SYMPTOMS (LUTS) IN ELITE VOLLEYBALL FEMALE ATHLETES
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INTRODUCTION AND AIM OF THE STUDY

High-level competition sports can have a variety of negative effects on the female urogenital apparatus. Stress urinary incontinence (SUI) is seen in all sports involving abrupt repeated increases in intra-abdominal pressure that may exceed perineal floor resistance. The highest prevalence is found in sports involving high impact activities such as gymnastics, track and field, and some ball games. The prevalence during sports among young, nulliparous elite athletes varies between 0% (golf) and 80% (trampolinists) (1). Aim of this study was to determine the frequency of SUI and other lower urinary tract symptoms (LUTS) in elite volleyball women.

MATERIALS AND METHODS

Elite volleyball female athletes were asked to fill in an anonymous self-questionnaire about their micturition habits and the occurrence of urinary complaints, during sports and everyday activities.

A total of 217 athletes (mean age 21.4 years) completed the questionnaire, providing a response rate of 100%. Among these, 4 were pluriparous, the others nulliparous. The subjects examined practised sport for 2 hours three times a week.

RESULTS

Overall SUI was observed in 29.50% of the athletes: among these, 62.50% reported loss of urine giggling, 28.20% sneezing, 21.90% during sport, 17.20% coughing. No correlation was found between duration of athletic activity, body mass index (BMI), parity and SUI (Pearson product moment).

Urgency was present in 45.16% of women but only 17.50% reported urge incontinence and 6.91% had an increased daytime frequency; 46.54% of subjects revealed feeling of incomplete emptying, 30.90% bladder pain, 12.44% perineal pain and 15.63% of the sexual active athletes (160) reported pain during sexual intercourse.

Thirteen women (6.45%) used small pads for urine loss: 9 one-three times a week, 3 four-six times a week and 1 one-two times a day. Among the incontinent subjects, 50% did not report urine loss in the last year while 37.20% referred a single event a month and 1.28% once a day or once a week .

Only 7.87% of the athletes have contacted a physician for urinary complaints and 2.36% have sought medical treatment for these problems; 11% of women suffer or have suffered from amenorrhea and 18.43% reported urinary infections: among these, 62.50% once a year, 20% two-three times a year, 7.50% more than three times a year.

The impact of these symptoms on quality of life is considered not to be a problem for 51.18% of the subjects, a little problem for 41.73%, a medium problem for 5.51% and a serious one for 1.58%.

DISCUSSION AND CONCLUSION

The results of this study suggest that LUTS are commonly observed in elite volleyball women: prevalence of SUI and urge incontinence in our study was 29.50% and 17.50%, respectively.

Similar results were found even in other studies of female elite athletes (2, 3). Our data also reported a high prevalence of symptoms, such as urgency (45.16%) and feeling of incomplete emptying (46.54%).

Even if urinary incontinence has been shown to affect quality of life, only a small group of women in this study reported the urinary complaints to be a problem.

Factors contributing to urinary incontinence in young nulliparous women are not fully understood: it is possible that high-impact activity can cause connective tissue or pelvic floor muscle damage. So far, the pelvic floor muscles need to be much stronger in elite athletes than in other women; therefore, it is important to give useful information about pelvic floor, give preventive advices and teach women about possible therapies for their problems.

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Abstract 25

A CONSERVATIVE TREATMENT FOR SEVERE PELVIC ORGAN PROLAPSES

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INTRODUCTION AND AIM OF THE STUDY

The Ulmsten's "Integral Theory" for pelvic floor dysfunctions is based on the need to reinforce fascias and ligaments, by means of prostheses, to obtain a reconstitution of the pelvic floor's anatomy (1). In September 2004 we developed a new surgical technique for the correction of severe pelvic prolapses using polypropylene prostheses. In this article we describe the technique adopted and present results obtained with the first 80 patients.

MATERIALS AND METHODS

We enrolled all patients with grade 3 uterus-vaginal prolapse wishing to maintain their uterus (when hysterectomy was not directly indicated, according to current guidelines). The pelvic status was classified according to the international Pelvic Organ Prolapse staging system (POP-Q). We divided the patients into 3 groups according to the compartments involved (Tab 1).

Group		Pre-op	Post-op 1 month	Post-op 6 months	Post-op 12 months	Post-op 18 months
Group I (n=35):	Ba (Cystocele)	+4.6 ± 0.6	-2.3 ± 0.9	-2.3 ± 1.2	-2.3 ± 1.1	-2.3 ± 0.8
	C (Uterus)	+2.6 ± 0.5	-6.8± 1.3	-6.6 ± 2.7	-6.6 ± 1.6	-6.6 ± 1.4
	Bp (Posterior)	-2.4 ± 0.5	-2.4 ± 0.8	-2.2 ± 0.5	-2.2 ± 0.8	-2.2 ± 0.6
Group II (n=25):	Ba (Cystocele)	-2.2 ± 0.7	-2.2 ± 0.7	-2.2 ± 0.6	-2.3 ± 0.5	-2.3 ± 0.3
	C (Uterus)	+2.8 ± 0.5	-5.6 ± 1.6	-6.0 ± 1.8	-6.2 ± 1.1	-6.0 ± 0.4
	Bp (Posterior)	+5.2 ± 0.2	-2.1 ± 1.0	-1.9 ± 0.9	-1.9 ± 0.7	-1.9 ± 0.4
Group III (n=20):	Ba (Cystocele)	+4.8 ± 0.8	-2.2 ± 0.5	-2.0 ± 0.8	-2.0 ± 0.6	-2.3 ± 0.3
	C (Uterus)	+3.8 ± 1.1	-6.2 ± 1.7	-6.0 ± 1.5	-6.1 ± 1.1	-6.3 ± 0.6
	Bp (Posterior)	+5.4 ± 0.9	-2.6 ± 0.3	-2.1 ± 0.6	-2.0 ± 0.7	-2.0 ± 0.3

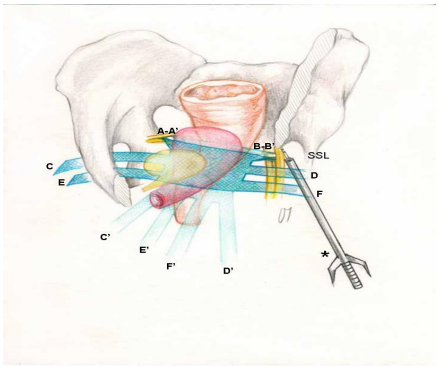
Tab 1

The first group consisted in patients affected by an anterior-central vaginal prolapse, the second by a central-posterior prolapse and the third group by the total pelvic prolapse.

Finally, all patients were evaluated before and after 1, 6, 12 and 18 months from the operation.

Surgical Technique Polypropylene prostheses (Gynemesh-Soft PS, 10x15cm - GyneMesh, Gynecare Ethicon) were used to reconstruct the pubo-cervix or the recto-vaginal fascia. They were prepared cutting 4 “arms” from the initial mesh (Fig.1). We used one mesh to repair the anterior-central or the central-posterior compartment, two for the total prolapse repair (both compartments).

Figure 1



RESULTS

From September 2004 to November 2006 we treated 80 patients. Polypropylene prostheses (Gynemesh-Soft PS, 10x15cm - GyneMesh, Gynecare Ethicon) were used to reconstruct the pubo-cervix or the recto-vaginal fascia. We performed an anterior-central vaginal reconstruction in 35 (43.8%) patients, central-posterior in 25 (31%) and total reconstruction in 20 (25%). The mean follow-up was 18 months (range 4-26). The severe pelvic prolapse, evaluated with the POP-Q System, was completely treated in all the patients and no recurrences were observed.

We recorded 3 vaginal erosions and one patient complained of a postoperative dispareunia.

DISCUSSION

These multiple lateral attachments could explain the absence of recurrences that we experienced so far, probably because should one detachment occur, the remaining attachments provide enough strength to support the entire pelvic floor. The uterus itself is also an important factor for the pelvic floor stability and sexual health [2]. We recorded only 3 (3.75%) vaginal erosions.

CONCLUSION

This pilot study suggests that our technique is safe and effective and can efficiently repair the pelvic organs prolapse without undergoing hysterectomy and with a low rate of vaginal erosions.

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Abstract 26

Chilbirth and perineal dysfunction in primiparous women: A multicentric study

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INTRODUCTION AND AIM OF THE STUDY

Literature of the last twenty years (1-2) suggests a strong relation between childbirth and development of perineal dysfunctions; however, with the exception of data from two original works (3), no studies evaluated the severity of symptoms and their relative impact on women's quality of life. Our study aims at: a) estimating the prevalence and severity of urinary and anal incontinence and their putative impact on women's quality of life; b) evaluating the possible modifications of sexual behaviour immediately after and at 3 months from the reproductive process; c) identifying the constitutional and obstetric factors significantly related to urinary and faecal incontinence.

MATERIALS AND METHODS

The present observational prospective study, involving 7 different hospital departments, was conducted in the period between April 2005 and December 2006.

Women were evaluated immediately after the delivery and at 3 month follow-up. Data were collected from a cohort of 960 nulliparae (full term delivery 37-42 weeks) who were subjected to two validated questionnaires: the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) and the Wexner's CGS continent grading system. To evaluate the impact of perineal dysfunctions on sexual behaviour, women were also requested to fill up a brief questionnaire. Chart reviews were conducted to get information on the constitutional risk factors, patient's labour, delivery course and infant's birth weight.

Association between individual risks factors and incontinence (urinary and anal) at 3 months was evaluated by chi-square test. Results were expressed as "*Odds ratio*" (OR: is used to assess the risk of a particular outcome if a certain factor is present) for each variable with confidence limits set at 95% (CL 95%).

RESULTS

Our survey indicates that 592 women had vaginal delivery and 368 caesarean section. The prevalence of incontinence and the evaluation of ICIQ-SF, Wexner's and sexual scores are shown in Table 1.

Tab. 1 Prevalence of urinary and anal incontinence, ICI-SF, Wexner's and sexual scores

	3 days		**3 months**	
	n	%	n	%
Urinary incontinence	327	34	161	21
ICI-SF score				
0-2	620	64.6	583	60.7
3-7 (mild)	224	23.3	100	10.4
8-13 (moderate)	76	7.9	46	4.8
14-21 (severe)	27	2.8	15	1.6
Anal incontinence	255	26.6	121	16
Wexner's score				
0	633	65.9	622	64.8
1-4 (mild)	216	22.5	113	11.8
5-9 (moderate)	37	3.9	8	0.8
10-20 (severe)	2	0.2	0	0
Missing	72	7.5	217	22.6
Incontinence mixed (urinary/anal)	-	-	43	6
Sexual score				
<6	353	36.77	186	25
>6	454	47.23	488	65
Missing	153	16	70	10

The specific risk factors associated with urinary and anal incontinence are show in Table 2.

Table 2. Risk of urinary or anal incontinence in relation to different constitutional and obstetric variables

	Urinary incontinence			**Anal incontinence**		
	P	**OR**	**95%c.I.**	**OR**	**95%c.I.**	P
Age>35	**0.03**	1.60	(1.04-2.57)	1.29	(0.75-2.24)	ns
Familiarity	**<5E-5**	2.56	(1.61-4.00)	2.38	(1.41-4.00)	**0.001**
Constipation	**0.047**	1.70	((1.01-2.86)	1.11	(0.59-2.09)	ns
Chronic cough	**0.002**	3.03	(1.43-6.25)	1.09	(0.41-2.94)	Ns
Smoking	**0.010**	1.75	(1.14-2.78)	1.11	(0.64.1.95)	ns
Incontinence before pregnancy	**<1E-10**	8.1	(3.7-17.4)	4.3	(2.2- 8.2)	**<5E-6**
Incontinence during pregnancy	**<1E-10**	4.6	(3.1-6.8)	3.6	(2.2-6.1)	**1E-6**
Mode of delivery Vaginal/Caesarean	**<1E-6**	1.18	(0.75-5.26)	1.18	(0.70-1.82)	ns
Perineum						
Intact		0.51	(0.32-0.84)	0.41	(0.22-0.78)	**0.005**
Episiotomy	**0.007**	1.59		2.91		**0.0003**
	0.03		(1.04-2.43)		(1.60-5.30)	

To assess the exact impact of labour and delivery in determining urinary or anal incontinences, another univariate analysis was performed only on women who developed the symptoms after the delivery (incontinence *de novo*). Notably, in this case a new significant association between the induced labour and urinary incontinence was found (OR: 2,2; 95% c.I : 1.2-4.03)

DISCUSSION

At 3 month follow-up urinary incontinence was still evident in 21% of women but the entity of symptoms was mild, with a modest impact on quality of life in 70%. The univariate analysis revealed significant correlation between urinary incontinence and a) mother's age>35 b) familiarity positive for incontinence and prolapse, chronic cough, constipation,

smoking, urinary incontinence before or during pregnancy and, among the obstetrical factors, the vaginal delivery and episiotomy. The univariate analysis on women who developed the symptom *de novo*, revealed significant associations between urinary incontinence and a) birth weight and notably, also b) the induced labour. The prevalence of anal incontinence is 16% with Wexner's scores from 1 to 4. The univariate analysis showed only the familiarity, the anal incontinence before and during pregnancy and the episiotomy to be significantly associated with anal incontinence. The caesarean section did not protect from developing symptoms. As expected, the analysis of sexual questionnaires filled immediately after the delivery, revealed a low score in 43% of women. Notably, the analysis of questionnaires filled at 3 month follow-up showed a significant improvement of women's quality of life (score>6 in 65% of women).

CONCLUSION

The present observational prospective study is, up to today, the most relevant Italian study in terms of size of the cohort of women involved. Many constitutional variables, and especially the familiarity, were found to be significantly related to both faecal and urinary incontinence. The presence of incontinence before or during pregnancy is highly predictive of postpartum persistent urinary and anal incontinence. The vaginal delivery is undoubtedly the most important and recognized risk factor for perineal dysfunctions while an intact perineum represents a crucial protection factor for the development of anal incontinence. The physiologic labour has a protective incontinence role while the induction of labour seems to be a risk factor for developing urinary incontinence.

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IS THERE A SYNERGIC EFFECT OF TOPICAL OESTROGEN WHEN ASSOCIATED TO ANTIMUSCARINICS IN THE TREATMENT OF OVERACTIVE BLADDER?

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INTRODUCTION AND AIM OF THE STUDY

It has been demonstrated that topical oestrogens are effective in improving overactive bladder (OAB) symptoms [1,2]. No data are available on a possible synergic effect of these drugs when associated to antimuscarinics. Aim of our study was to compare the efficacy of antimuscarinics alone or in association with local oestrogen in OAB treatment.

MATERIALS AND METHODS

We prospectively included consecutive women with OAB symptoms and urodynamically proven detrusor overactivity (DO). Women with vaginal prolapse 2^{nd} stage or previous urogynecological surgery were excluded. Patients were prescribed Tolterodine 4mg ER daily with (group 1) or without (group 2) local Oestriol for at least 12 weeks. Treatment efficacy was assessed with a 3-point scale (0=no change; 1=improvement, 2=cured) [3].

RESULTS

From January 2005 to January 2007, from a total of 532 women who underwent urodynamic testing, 79 were included: 36 women in group 1 and 43 in group 2. The two groups did not differ for age, parity, BMI. A total of 7 (19.4%) and 8 (18.6%) women did not respond to treatment in group 1 and in group 2, respectively. These data were not statistically different (p value = 1.0).

DISCUSSION

To the best of our knowledge this is the first study reporting a comparison between antimuscarinics with or without local oestrogens in the treatment of OAB.

CONCLUSION

These preliminary data do not show any synergic effect of the two considered drugs. However, a prospective randomised controlled study would be welcome to verify our results.

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OVERACTIVE BLADDER SYNDROME BEFORE AND AFTER ANTERIOR VAGINAL PROLAPSE MESH REPAIR

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INTRODUCTION AND AIM OF THE STUDY

In the field of female pelvic organ prolapse (POP) the relationship between anatomy, function and quality of life (QoL) requires further researches, particularly if we consider the POP surgery impact. Surgical repair remains the gold standard treatment for women with anterior vaginal wall prolapse even if the effects of surgery on overactive bladder syndrome are still unknown. We evaluated women with anterior vaginal defect and urgency with or without urinary incontinence who underwent prolapse mesh repair.

MATERIALS AND METHODS

Between December 2004 and May 2007, 116 patients affected by anterior vaginal wall prolapse underwent anterior transvaginal repair with mesh. All patients were pre-operatively assessed using urogynecological history, POP-Q system, urodynamic tests and bladder diary. All patients were asked to fill in the Urogenital Distress Inventory short-form (UDI-6) and the Incontinence Impact Questionnaire short-form (IIQ-7). All women underwent anterior repair by transvaginal placement of a monofilament polypropylene mesh. The prosthesis is fixed anteriorly to the arcus tendineus levator ani muscle and to the uterine cervix posteriorly. After surgery all patients were evaluated with a physical examination (at 3, 6, and 12 months), bladder diary, UDI-6 and IIQ-7 (6 months). Urodynamic assessment was performed only on patients with urinary incontinence and/or overactive bladder symptoms at least 3 months after surgery. Pre- and post-operative bladder diary data (daytime frequency, pads employed) and questionnaires data were compared using the Wilcoxon test.

RESULTS

Before surgery, all the 116 recruited women had a POP □stage II. Among these patients, 24 (20.6%) had only anterior vaginal wall prolapse without incontinence or overactive bladder symptoms; 40 (34.4%) had stress urinary incontinence (SUI) and 1 (0.8%) had a previous anterior colporraphy. For this study we have examined the remaining 51 patients who, pre-operatively, complained of urgency/frequency symptoms with or without incontinence. Their mean age was 65.3 years (range 49-83). Before surgery, 29 out 51 patients (56.8%) had mixed urinary incontinence (MUI), 19 (37.2%) urgency/frequency without incontinence and 3 (5.8%) urge incontinence (fig. 1). The mean follow-up was 17.7 months (median 17; DS±6.8; range 3-29). After surgery 37 (72.5%) patients were subjectively asymptomatic, while 14 (27.5%) reported LUTS. Urodynamic investigations were performed from 3 to 10 months after surgery. Six (11.7%) patients had MUI, 3 (5.8%) urgency/frequency without incontinence, 3 (5.8%) urge incontinence, and 2 (3.9%) pure urodynamic SUI (fig. 2). Thirty-nine (76%) women reduced significantly the daytime frequency (>11 versus <8 voids per day) ($p<0,01$). The mean number of pads used daily changed from 1.3 to 1.1 ($p=0.35$). Pre- and post-operative data reported on the questionnaires are shown in table 1. In 5 out of 51 patients (9.8%) we observed an anterior vaginal wall prolapse relapse, in 1 patient an anterior and central defect. No mesh related complications, such as extrusion or infection, have been observed.

CONCLUSION

The correction of anterior vaginal wall defect with mesh provides excellent anatomic results. Failure rate was 11.7%. We noticed a significant decrease of both MUI (56,8% vs 11,7%) and urgency/frequency symptoms without incontinence (37,2% vs 5,8%). No *de novo* urge incontinence was reported. Despite the use of synthetic material, the correction of anterior vaginal wall defect with mesh may improve the irritating urinary symptoms also in patients affected by overactive bladder syndrome.

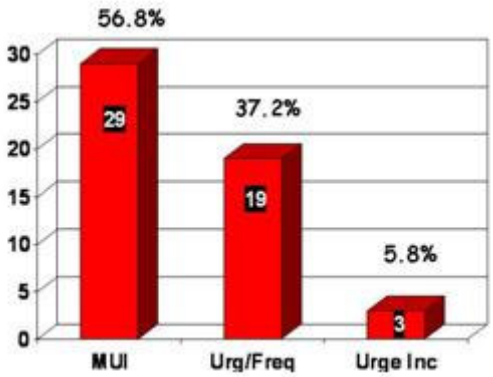

Fig.1

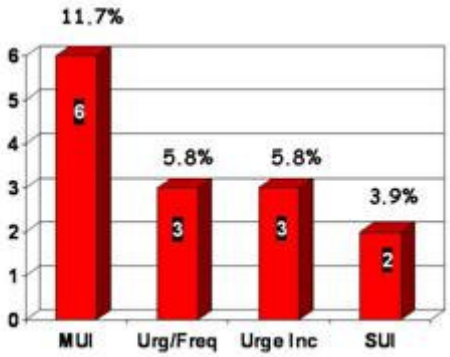

Fig.2

Fig. 1: *Before surgery urodynamic detrusor overactivity was demonstrated in 13 out of 29 patients with MUI, in 7/19 with Urg/Freq symptoms and in 3/3 with urge incontinence.*

Fig. 2: *After surgery 14 patients reported LUTS. Urodynamic detrusor overactivity was demonstrated in 4 out of 6 patients with MUI, and in all the 6 patients with Urg/Freq symptoms and urge incontinence. Urodynamic SUI was confirmed in the 2 remaining patients.*

Questionnaire	Mean pre-op score (range)	Mean post-op score (range)	p
UDI-6	9 (2-16)	3 (0-14)	< 0,02
IIQ-7	8 (3-21)	4 (0-15)	< 0,03

Tab. 1: *Subjective symptoms and QoL evaluation significantly improved after surgery.*