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INFLUENCE OF CONCURRENT PROLAPSE REPAIR ON TOT SLING OUTCOMES

Hypothesis / aims of study

The risk of surgery for pelvic organ prolapse (POP) or stress urinary incontinence (SUI) by age 80 is approximately 11.1% in women. POP and SUI frequently coexist with each other in women particularly within the 5th to 6th decades of life. In the last decade, transvaginal minimally invasive sling procedures have become popular and tension-free vaginal tape or trans-obturator tape (TOT) has gained general acceptance, emerging as the most common anti-incontinence procedures worldwide. When performing concurrent prolapse and continence surgeries, however, some reports suggest the potential risks of developing the storage and voiding problems (de novo detrusor overactivity and bladder outlet obstruction) and increasing urinary tract injuries.[1] Whether concomitant prolapse surgery affects outcomes of sling surgery is controversial.[2] We examined the effect of concomitant prolapse surgical repair with mesh on short-term outcomes of sling surgery with TOT.

Study design, materials and methods

After obtaining Institutional Review Board approval, we retrospectively reviewed the clinical records of 51 women who underwent TOT for stress urinary incontinence (SUI) between October 2007 and January 2010. Twenty-seven women were treated with TOT alone (group 1), whereas twenty-four women were concurrently treated with prolapsed repair at the time of TOT (group 2). In group 2, prolapse repair was performed with the use of polypropylene mesh (GyneMesh PS^{TM}, Ethicon, USA) cut by the surgeon according to the Trans-Vaginal Mesh (TVM) technique [3], and the TOT was performed through a separate incision after the completion of TVM procedure. After having awoken from anesthesia, the sling tension was adjusted by the use of a cough stress test in both groups. Patients were followed up at least 6 months after surgery. Treatment outcome, surgical complications and postoperative urinary problems were compared 6 months after surgery. Women were considered to have UI if they reported symptoms and required a pad usage during activities of daily living. SUI symptoms were verified by a cough stress test.

Results

Age, body mass index, parity and histories of hysterectomy and pelvic floor reconstruction did not differ between groups. SUI persisted postoperatively in 2 patients of each group (4 in total), and did in 1 of each group 6 months after surgery (table 1). Urge UI (UUI) was found 10 patients (4 in group 1 and 6 in group 2) preoperatively and persisted in only 1 of group 2 6 months after surgery (table 1). De novo UUI developed in 4 patients (1 of group 1 and 3 of group 2), but all was improved until 6 months after surgery (table 1). In uroflowmetry, the mean values of voided volume (mL), maximum flow rate (mL/s), average flow rate (mL/s) and post-void residual urine volume (PVR: mL) were 321, 30.8, 16.0, 11.9 in group 1, and 360, 28.3, 13.1, 27.0 in group 2 preoperatively (table 2). After surgery, these values were 310, 26.0, 12.5, 7.6 in group 1, and 290, 28.8, 13.2, 28.9 in group 2 (table 2). Except voided volume in group 2 ($p = 0.006$), there were no significant differences in these parameters between before and after surgery in each group. However, postoperative PVR was significantly different between groups ($p = 0.01$). Two patients of group 2 developed PVR $\geq$ 200ml immediately after surgery. Pressure-flow study demonstrated weak detrusor contractility in these two patients. PVR improved in 1 patient within 1 month, but persisted in 1 who had showed PVR $\geq$ 200ml preoperatively. Surgical complications occurred in 2 patients of group 1, urethral injury and thigh pain in 1 and thigh pain in 1.

Interpretation of results

TOT was safe and its short-term outcomes were good. Surgical outcomes, safety and postoperative urinary conditions were equivalent in both groups. Thus, concurrent performance of prolapse surgery at the time of sling procedure did not increase the surgical complications and the postoperative urinary problems.

Concluding message

The short-term outcomes of TOT are excellent and not significantly affected by concurrent performance of prolapse surgical repair (TVM procedure).

Table 1. Lower urinary tract dysfunction before and after surgery

	SUI			UUI (de novo)			PVR ≥ 100mL		
	Pre	1M	6M	Pre	1M	6M	Pre	1M	6M
Group 1 (n = 27)	27	2	1	4	1 (1)	0	0	0	0
Group 2 (n = 24)	14	2	1	6	1 (3)	1	1	2	1

SUI: stress urinary incontinence, UUI: urge urinary incontinence, PVR: post-void residual urine volume. Pre: preoperative, 1M: 1 month after surgery, 6M: 6 months after surgery

Table 2. Surgical influence on uroflowmetric parameters.

	Vv (mL)	Qmax (mL/s)	Qave (mL/s)	PVR (mL)
Group 1 (n = 27)				
Pre	321	30.8	16.0	11.9
Post	310	26.0	12.5	7.6
Group 2 (n = 24)				
Pre	360	28.3	13.1	27.0
Post	290*	28.8	13.2	28.9**

Vv: voided volume, Qmax peak flow rate, Qave: average flow rate, PVR: post-void residual urine volume. Pre: preoperative, Post: postoperative
Single asterisk: a significant difference between before and after surgery in the group. Double asterisk: a significant difference between groups.

References

1. Anger JT et al. J Urol 2008; 180: 1003.
2. Fatton B. Int Urogynecol J 2009; 20: 235.
3. Collinet P et al. Int Urogynecol J 2006; 17: 315.

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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**