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MIDURETHRAL SYNTHETIC SLINGS IN WOMEN WITH STRESS INCONTINENCE AND SEVERE LOWER URINARY TRACT SYMPTOMS

Hypothesis / aims of study

The midurethral synthetic sling has become one of the most commonly performed surgeries for stress urinary incontinence throughout the world. Several studies have shown that some lower urinary tract symptoms (LUTS) can improve after sling surgery. However, the effect of slings on patients with severe LUTS is unknown. We evaluated a subset of patients with severe LUTS based on the American Urological Association Symptom Score (AUASS) which is routinely used at our institution to evaluate LUTS.

Study design, materials and methods

This study was conducted as a post-hoc analysis of women who are part of a prospective database of midurethral synthetic slings at our institution. Preoperatively, the AUASS and post-void residual (PVR) were documented. All subjects had follow-up four to six weeks postoperatively where a PVR was obtained and the AUASS was repeated. Three groups of subjects with severe LUTS were defined: Group A had a total AUASS ≥ 20; Group B had a voiding subscale of ≥ 12 (questions 1, 3, 5 and 6 on the AUASS, with a mean of 3); Group C had urodynamic evidence of bladder outlet obstruction, defined as a maximum flow less than 12mL/s, with a detrusor pressure at maximum flow greater than 20cm H_2O.

Results

A total of 106 women have had solitary midurethral synthetic sling surgery and completed follow-up. Using the aforementioned definitions, 30, 23 and 11 subjects fell into groups A, B and C, respectively. All groups had statistically significant improvements in total AUASS, quality of life score, storage score, and voiding subscore (Table 1). Mean PVR increased significantly at the time of the voiding trial, but decreased near baseline at follow-up (Table 2). Five women in group A failed the initial voiding trial and required catheterization upon discharge. However, all five passed a subsequent voiding trial within 48 to 72 hours.

Interpretation of results

The management of patients presenting with concomitant stress incontinence and severe LUTS is often challenging. The idea that placement of a sling might improve LUTS, and potentially voiding symptoms, is not intuitive. One possible explanation is that patients with severe urge symptoms might have concomitant voiding symptoms. For example, if a subject has severe urge incontinence and typically has low-volume voids, they might perceive a slow stream, incomplete emptying, and have to push or strain to start urination. While this theory might explain some of the findings it would not explain the improvements seen in those with urodynamically-confirmed obstruction. Nonetheless, we have shown that patient voiding symptoms and quality of life are significantly improved in the short-term after sling therapy.

Concluding message

Patients with both stress urinary incontinence and severe LUTS (both storage and voiding) based on a variety of definitions can be treated safely with midurethral slings. In the short-term, these severe symptoms seem to improve dramatically with significant improvement in patient quality of life.

Table 1. Results of AUASS and subscores after sling surgery

Parameter		**Preoperative**		**Postoperative**		**p-value**
	n	**mean**	**SD**	**mean**	**SD**	
Subjects with AUASS ≥ 20	*30*					
AUA Storage Score		11.87	2.16	3.77	3.07	<0.0001
AUA Voiding Score		12.73	3.34	5.53	3.43	<0.0001
Total AUASS		24.57	3.79	9.30	5.90	<0.0001
AUA QOL		5.00	1.36	1.60	1.48	<0.0001
Subjects with VS ≥ 12	*23*					
AUA Symptom Score		11.61	2.27	4.82	3.00	<0.0001
AUA Voiding Score		14.74	2.72	4.82	3.56	<0.0001

Total AUASS		26.35	3.82	9.65	5.52	<0.0001
AUA QOL		5.17	1.07	1.24	1.25	<0.0001
Subjects with BOO on UDS	11					
AUA Symptom Score		8.55	3.72	5.18	3.31	0.0171
AUA Voiding Score		6.91	5.80	2.09	2.39	0.0202
Total AUASS		15.45	8.45	6.82	4.47	0.0014
AUA QOL		4.82	0.98	1.36	1.12	<0.0001

Table 2. PVR of women with AUASS ≥ 20 in mL at baseline, time of voiding trial and at follow-up

PVR	**mean**	**SD**	**p-value**
Preoperative	27.6	35.3	0.0016*; 0.2975†
Voiding Trial in Recovery	123.9	143.2	
Postoperative	41.7	58.6	

* compared with voiding trial; † compared to postoperative

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Was this study approved by an ethics committee?	**Yes**
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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**