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READJUSTABLE SLING PROCEDURE (REMEEX SYSTEM) FOR THE TREATMENT OF FEMALE URINARY INCONTINENCE WITH DETRUSOR UNDERACTIVITY

Hypothesis / aims of study
Despite the development of stress urinary incontinence (SUI) treatment methods, a dilemma still exists what is the optimum tension when sling is placed beneath the midurethra. Excess tension on the urethra may cause postoperative bladder outlet obstruction. We hypothesized that adjusting tension after surgery would bring benefits to patients with detrusor underactivity (DU) patient. Thus, we evaluated the efficacy of Remeex system for the treatment of SUI in women with DU.

Study design, materials and methods
We retrospectively analyzed medical records of 27 patients who were treated with Remeex system due to SUI with DU between January 2007 and April 2013. DU was defined as a contraction of reduced strength and/or duration, resulting in prolonged bladder emptying and/or failure to achieve complete bladder emptying within a normal time span by the 2002 International Continence Society standardization report. Before surgery, patients were evaluated by physical examination, Q-tip test, pressure-flow study, the Sandvik Severity Index (SSI) and the Incontinence-QOL (I-QOL) questionnaires. The day after surgery, tension adjustment was performed by rotating the manipulator depending of the patient's stress test with the post void residual. Three months after surgery, changes in SSI and I-QOL questionnaires and uroflowmetry (UFM) parameters were evaluated. Cure was defined as "no urine leakage" on the Sandvik questionnaire.

Results
The median age was 59 years (range, 39-81 years), the mean parity was 2.92 times (range, 1-9 times) and the mean BMI was 25.56 ± 3.12 kg/m^2. The mean follow-up period was 10.6 months (range, 1-69 months). 8 (29.6%) of the patients had already undergone anti-incontinence surgery, such as tension free suburethral sling operation or bulking agents injection. 18 (66.7%) patients previously underwent hysterectomy (radical hysterectomy in 15, simple hysterectomy in 3) and 1 (3.7%) patient underwent abdominoperineal resection. There were 3 (11.1%) patients with diabetes mellitus, 2 (7.4%) patients with spinal lesion, and 1 (3.7%) patient with Parkinson disease. The mean abdominal leak point pressure, detrusor pressure at maximum flow rate, and maximal detrusor pressure were 92.1 ± 36.8 cmH_20, 17.4 ± 13.6 cmH_20, and 24.3 ± 16.1 cmH_20, respectively. At the final follow up visit, the complete cure rate of SUI was 77.8% (21/27). The mean duration of immediate postoperative tension adjustment was 1.5 days. Sling readjustment due to recurred incontinence was needed in 1 patient at 6 years after Remeex system. The rate of *de novo* clean intermittent catheterization (CIC) due to urinary retention was 29.8% (8/27). Among them, 6 cases experienced persistent voiding difficulty that required removal of mesh, 1 case required cutting of the mesh, and 1 case needed ongoing CIC. SSI and all domains of I-QOL scores were significantly improved after operation. There were no significant changes in postoperative UFM parameters (Table 1).

Interpretation of results
Remeex system for female SUI with DU demonstrated no high cure rate, but provided improving quality of life. Our results demonstrated that Remeex system might be considered as an option for patients with concomitant female SUI and DU patients.

Concluding message
Remeex system might be considered as an option for patients with concomitant female SUI and DU patients.

Table1 Outcome measures at baseline and 3 months after operation

	Baseline	3 months	*P* value
Sandvik severity index			< 0.001
None	0	12	
Slight	1	3	
Moderate	2	5	
Severe	11	2	
Very severe	11	1	
I-QOL			
Mean total I-QOL score	45.6 ± 26.2	77.1 ± 28.7	0.002
Mean avoidance and limiting behaviors	28.3 ± 31.7	64.2 ± 29.6	0.006
Mean psychosocial impacts	29.7 ± 30.5	63.9 ± 35.2	0.005
Mean social embarrassment	20.4 ± 28.7	60.3 ± 34.5	0.007
Maximum flow rate	15.1 ± 7.6	10.2 ± 8.1	0.078
Post-void residual urine volume	56.5 ± 68.7	92.1 ± 149.1	0.500

Disclosures
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