

# The effectiveness of transobturator adjustable midurethral sling in women with complicated stress urinary incontinence

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## Hypothesis / aims of study

Though the efficiency of the midurethral sling is high, 5% to 35% of patients experience surgical failure. [1] Moreover, the repeat surgical interventions have significantly lower cure rate, than those in primary patients. [2] The improper tensioning may lead to ineffectiveness of the procedure; it can cause both persistent incontinence and voiding disorders. The survey results show 83,3% of surgeons consider the tape tension is important or very important factor of success, however among surgeons there is no common opinion on how to choose the proper tension. [3] As well, there is no clear guidance on choosing the best way to treat patients with recurrent SUI or those, who have risk factors for failure of the surgery.

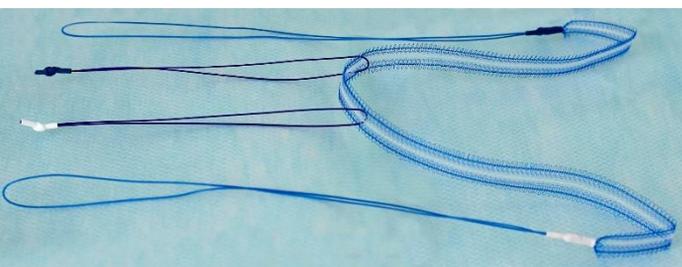
The purpose of the study was to evaluate the efficacy of transobturator adjustable midurethral sling procedure in complicated cases of SUI or mixed urinary incontinence.

## Study design, materials and methods

This prospective study comprised 70 women with SUI or mixed urine incontinence, who had predictive factors of failure, such as fixed urethra (Q-tip<30°), intrinsic sphincter deficiency (ICD), history of previous incontinence surgery or pelvic organ prolapse repair or concomitant prolapse ≤2 stage (POP-Q). The mean age of the enrolled patients was 58,07±9,65 years.

All patients underwent the transobturator adjustable midurethral tape procedure. We used a monofilament polypropylene sling with special threads, that allow to adjust its tension. (Fig.1)

The pre- and postoperative evaluation included medical history, vaginal examination, cough stress test in supine and standing position, urodynamics, bladder ultrasound and post-void residual (PVR) urine measurement, questionnaires (UDI-6, UIQ-6, PFIQ-7, ICIQ-SF).



**Figure 1.** The tape has atraumatic edges and unstretchable structure. Tightening the ends of the tape increases its tension, whereas pulling the threads in the central part of the tape decrease the tension.

## Results

Mean follow-up was 12,15 ± 1,47 months. Mean operating time was 16,76 ± 10,01 min. Data on patients who underwent the sling tension adjusting is presented in Tab.1.

The increasing of the tape tension the next day after surgery was required in 33 patients (47,14%). This procedure was repeated in 9 (12,85%) of them as the stress test was positive at the following examination. The adjustment was ineffective in 2 (2,85%) women, who demonstrated continuous urinary incontinence. During follow-up the leakage was persistent, therefore after 6 month follow-up both patients underwent a retropubic midurethral sling procedure, which was effective.

After surgery, 12 (17,14%) women complained on slow or intermittent stream, and spraying of the urine. All of those women had obstructive flow pattern, combined with >100 ml PVR in 6 (8,57%) cases. After adjustment all patients were continent, with PVR ≤ 60 ml. No cases of intraoperative bladder or urethral injury were detected. There was one case of significant blood loss (<300 ml), that was managed with the tight tamponade of the vagina for 12 h.

In early postoperative period 2 (2,85%) women complained of groin pain. As the complete relief was not achieved by oral analgetics, the pain was resolved within 3 weeks by trigger point injections. No tape excision were required.

The results of 12-month follow-up are presented at Tab.2. The objective cure rate was 94,28% (n=66). There was no significant decrease of Qmax (p=0,542). There were no cases of wound infections, vaginal mesh extrusion or urinary obstruction. The incidence of de novo urge incontinence was 2,85% (n=2), de novo urgency rate was 7,14% (n=5). The questionnaires scores showed 90,0% (n=63) patients to be very satisfied with great improvement of quality of life (p<0,001).

**Table 1.** The distribution of risk factors among patients, who was required tape tension adjustment

Variables	Total number, no. (%)	Tape tension adjustment, no. (%)			
		1 <sup>st</sup> day		2 <sup>nd</sup> day	
		Incr.	Decr.	Incr.	Decr.
Mixed incontinence	32 (45,71%)	10 (31,25%)	4 (12,5%)	1 (3,12%)	-
Fixed urethra (Q-tip<30°)	8 (5,6%)	3 (37,5%)	2 (25,0%)	1 (12,5%)	1 (12,5%)
ISD	6 (4,2%)	4 (66,67%)	1 (16,67%)	-	-
Cystocele ≤2 st.	7 (10,0%)	1 (14,28%)	-	4 (57,14%)	2 (28,57%)
Previous prolapse surgery	20 (28,57%)	7 (35,0%)	3 (15,0%)	3 (15,0%)	1 (5,0%)
Previous incontinence surgery	11 (15,71%)	8 (72,7%)	2 (18,18%)	-	-

Incr. – increase, Decr. – decrease

## Interpretation of results

The high objective and subjective results shows the adjustable transobturator sling is a reasonable option for treating patients with complicated SUI. There were no major complications of the surgery. The ability to adjust the sling helped us to cope with such problem as obstructive voiding and improved the results in number of cases. Though in all cases the tape was placed in tension-free manner, we observed the high rate of postoperative voiding dysfunction. The fact that all of them were successfully resolved by loosening of the sling, suggests, that there is no universal way to predict the proper tape tension in different patients.

**Table 2.** Comparison of pre- and postoperative values

Results:	Before surgery	12 month follow-up	p-value
Positive stress test, % (no.)	100% (70)	5,71% (4)	-
Q max, ml/s, mean ± SD	29,20±8,61	27,66±8,21	0,542
UDI – 6, mean ± SD	44,76±18,83	7,02±11,65	<0,0001
UIQ-7, mean ± SD	44,69±23,42	5,99±10,90	<0,0001
PISQ-12, mean ± SD	20,00±7,69	22,02±5,67	<0,01
ICIQ-SF, mean ± SD	13,83±4,26	1,81±3,36	<0,0001

## Concluding message

The transobturator adjustable midurethral sling is proved to be a high effective and safe method for treatment of female stress urinary incontinence even in complicated or recurrent SUI cases. The fine tuning of the tape tension let the surgeon to achieve better results and to avoid developing of voiding disorders. The simplicity of the method and its advantages make it possible to use it in everyday practice.

## References

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## Disclosures

**Funding:** NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Saint-Petersburg State University Clinic Ethical Committee **Helsinki:** Yes **Informed Consent:** Yes