350

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OUTCOME PREDICTION OF TRANSOBTURATOR SUBURETHRAL TAPE PROCEDURES WITH POSTOPERATIVE ULTRASONOGRAPHIC ASSESSMENT

Hypothesis / aims of study
The purpose of this study was to determinate the correlation between immediate postoperative ultrasonographic location of transobturator suburethral tape (TOT) and surgical outcome. Another factors, as associated POP surgery, were analysed in order to determinate if they modified sling position and clinical outcomes.

Study design, materials and methods
We reviewed all women with SUI undergoing TOT (n= 52) from January 2013 to December 2014. Data were obtained reviewing clinical histories and during prospective medical controls. Retrieved data included clinical information and ultrasound findings. Patients with concomitant POP surgery were included, as well as women with stress-predominant MUI.
Surgery was performed under spinal anaesthesia. Introital ultrasound was performed 24 hours after the surgery in order to identify and obtain objective measurements of the position of the TOT tape relative to the urethra. Two measurements were taken at the sagittal plane. Total urethral length (TUL) was measured from the bladder neck to the external meatus, along the urethral longitudinal axis, and bladder neck tape distance (BTD), setting the reference point at the midpoint of the tape. The patients were examined at 1, 6 and 12 months after the surgery. Outcome was classified as cure, improvement and failure.
Statistical analyses were performed using the statistical package SPSS®, version 18.0 for Windows (SPSS Inc., Chicago IL, USA). Continuous quantitative variables were compared with Student's independent *t* test, or Kruskall-Wallis test in case of non-normal distributed data. Binary logistic regression model was used to identify baseline factors that could predict surgical failure, and posteriorly, a multivariate model was constructed including potential risk factors of failure (MUI, maximum urethral closure pressure, previous surgery and concomitant POP surgery). A bilateral value of $p < 0.05$ was used to define statistical significance.

Results
A total of 81 women underwent TOT procedure in this period of time. Ultrasonographic reports were available for 52 patients, who were included in this analysis. 2 patients failed at annual follow-up.
A cure-improvement rate of 86.1% was observed. The average age of our patients was 65.2 years and average BMI was 31.1 kg/m^2. 10 patients (12.3%) suffered from MUI and 45 women (55.6%) had concomitant POP surgery. All demographic and clinical characteristics are represented at Table 1. Bladder neck tape distance was statistically associated to a year-failure prediction (p=0.024). Other factors did not significantly influence sling results.
Figure 2 shows that patients with failure outcome presented longer BTD (p=0.018). A visual analyses of this distribution seemed to show a differential point at a BTD >20 mm. Using this point we found a 6.11 folded failure probability (p=0.028) for patients with a tape located to 20 mm or more from bladder neck.
Results were also analysed according to urethral section position. 80% of the tapes were situated at middle section (40th–70th percentile), 18% at distal section (>70th percentile) and only 2% at proximal section (<40th percentile). Distal portion situation represented a higher risk of failure compared to medium portion (OR=7,20; IC95%=1,35–38,33), but the analyses according to urethral section position was not globally significative (p=0,69).
Secondary, tape location was not influenced by the association of POP surgery at the same procedure (p=0.44).

Interpretation of results
The present study demonstrates correlation between tape position and clinical outcome at one year, with a higher failure risk in case of tapes being located at 20 mm or longer distance from bladder neck. These results are consistent with previous studies that claim an association between ultrasonographic measurements and clinical outcome. Although another studies observed that the location of the tape under the proximal urethra, close to the bladder neck, is related to the greatest risk of treatment failure, this study could not confirm this statement due to a very low number of tapes at this position in our cohort.
This study observed that concomitant POP surgery did not modified ultrasonographic tape position neither clinical outcomes.

Concluding message
The highest failure rate of TOT in our study coincides with the location of the tape at 20 mm or more from UUV. Concomitant POP surgery do not seem to affect TOT urethral position and results.

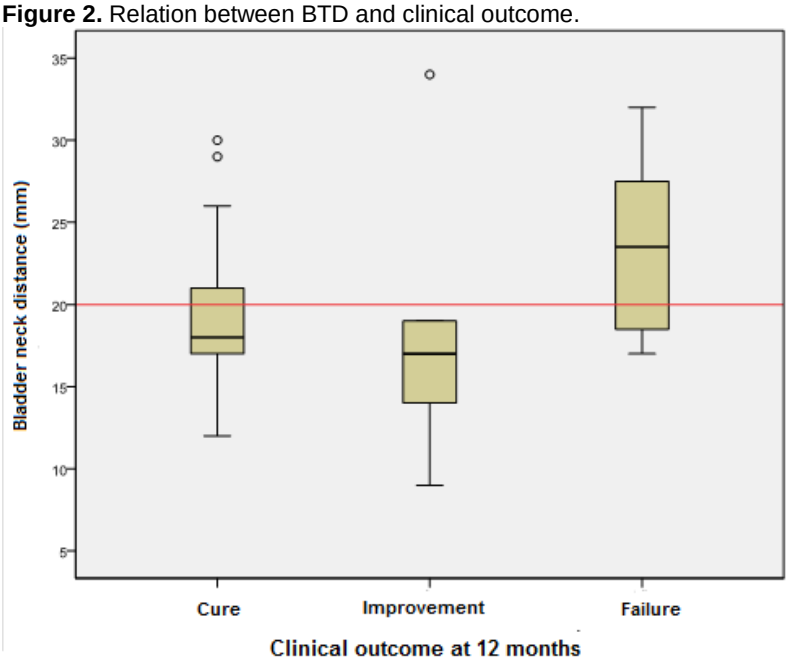
Table 1. Demographic and clinical characteristics in the cohort.

		Univariable analysis	Multivariable analysis	OR	IC 95%
Basal data					
Age	65,2 [35,7-81,0]	0,53			
BMI	31,1 [20,7-42,2]	0,78			
Parity	2 [0-6]	0,60			
Sandvik	8 [0-12]	0,76			
Previous surgery	13 (16)	0,55	0,999	0,0	0 -

Urethral hypermobility	63 (77,8)	0,29			
MUI	10 (12,3)	0,65	0,417	0,47	0,08 – 2,88
MUCP	42 [6-75]	0,69	0,317	0,96	0,89 – 1,04
Surgical data					
POP surgery	45 (55,6)	0,06	0,188	1,88	0,03 – 1,96
BTD (mm)	18 [9-34]	**0,02**	**0,025**	**6,11**	1,22 - 30,57

MUCP: maximum urethral closure pressure

Figure 2. Relation between BTD and clinical outcome.



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