

POSSIBLE MORPHOLOGICAL CHANGES CORRELATING WITH LONG-TERM COMPLICATIONS AFTER TVT PROCEDURE

Hypothesis / aims of study

Tension free vaginal tape (TVT) is a widely-used method for the treatment of stress urinary incontinence. Despite many studies on the long-term efficacy of this procedure, to date there are no relevant data concerning morphological changes of the lower urinary tract, especially in conjunction with long-term complications.

The aim of our study was to evaluate and compare morphological changes of the lower urinary tract in patients after successful TVT procedures and in patients with recurrent stress urinary incontinence, de novo urgency and de novo problems during intercourse. We focused especially on changes in the mobility of the whole urethra, and the relationship between tape position and mobility of the urethra.

Study design, materials and methods

This prospective observational study included 111 women with urodynamic stress urinary incontinence (USI) who underwent the TVT procedure, mean age 56.9 years (SD=10.9), mean BMI 27.7 (SD=4.8), and mean parity 1.9 (SD=0.74). The women were subjected to thorough examinations before and after surgery, including urodynamics and an ultrasound examination, with postoperative check-ups 3-6 months, one year, two years, three and five years after surgery. Ultrasound measurements were taken in a supine position at rest and during maximal Valsalva. Because the anatomical length of the urethra varies, measurements of the urethra were taken at 4 defined points: the urethrovesical junction (UVJ), 17 mm below the UVJ (the middle of the urethra) and one centimeter above and below this point (upper and lower third). After surgery the position and mobility of the tape was also assessed.

For all women, we examined changes in position and mobility of the whole urethra during maximal Valsalva manoeuvre and changes induced by the surgery in patients with different outcomes.

Results

Due to the low prevalence of complications we were not able to prove statistically significant differences in tape position and mobility for patients with different surgical outcomes. But in patients with de novo urgency we found statistically significant higher kinking of the upper parts of the urethra, evident at the end of survey though not at the beginning of the follow-up (Fig. 1). There was increased prevalence of de novo urgency from 10% to 23% at the end of the survey period. Three months after surgery 49 women were sexually active, and 10 women had some difficulties during intercourse; at the end of survey 5 of the 37 sexually active women had difficulties. In women with problems the tape was 2 mm further from the urethra, and the tape had a different inclination to the lower urethral segment (Fig. 2). After the procedure the tape moved towards the urethra. Three months after surgery the mean distance between tape and urethra was 10 mm (SD 2.9 mm); at the end of the follow-up it was 2 mm closer to the urethra with a mean distance of 8.1 mm (SD 2.7 mm), and the tape was approximately 25% narrower than at the beginning (mean thickness changed from 10.9 to 8.2 mm). These differences are statistically significant.

Interpretation of results

We proved that the tape retracts in the long term. In patients with de novo urgency, higher kinking of the upper part of the urethra was observed. Difficulties during intercourse after surgery are associated with different tape placement: in such cases the tape is further from the urethra and at a different inclination to the lower urethral segment.

Concluding message

We proved that some long-term complications after TVT procedure have morphological correlations. Tape retraction and increase kinking of the urethra may play a role in the development of de novo urgency. Abnormal localization of the tape may be the reason for problems during intercourse.

Fig. 1

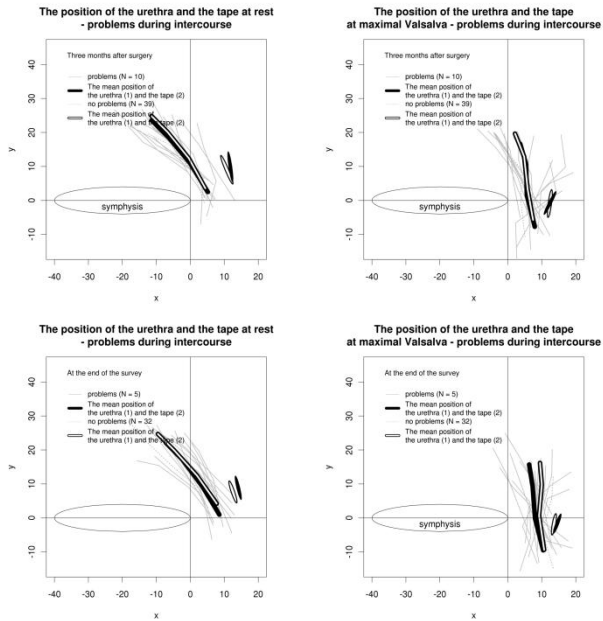
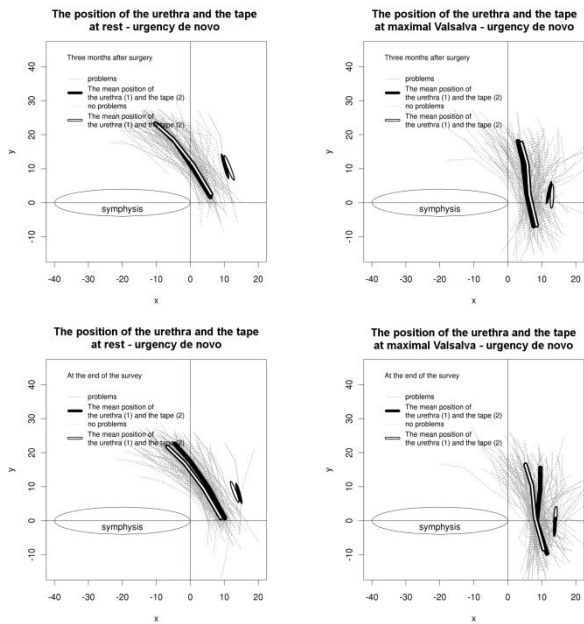


Fig. 2



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Is this a clinical trial?	Yes
Is this study registered in a public clinical trials registry?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	Local ethic's committee of General Teaching Hospital, Prague
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes