

## URETHRAL MOBILITY ASSESSMENT BY MEANS OF PELVIC FLOOR ULTRASOUND AFTER EXCISION OF THE VAGINAL PORTION OF THE SUB-URETHRAL TAPE.

### Hypothesis / aims of study

Excision of the sub-urethral tape is one of the therapeutic options when complications of sling procedures occur. Removing the sling eliminates some of the adverse outcomes as well as enables the surgeon to insert a new tape. It seems that sling removal influences urethral mobility, thus changing the anatomy. These alterations may be crucial for subsequent anti-incontinence procedures.

The aim of this study was to assess the changes in urethral mobility after the removal of the vaginal portion of the sub-urethral sling.

### Study design, materials and methods

100 women qualified for excision of the sub-urethral tape were enrolled in the study. All patients suffered from complications of sling insertion. The procedure had been performed in different units all over the country. The mean age of the patients was 61,5 years (38-83). The most common adverse outcomes of the sling procedures were: overactive bladder (OAB) occurring de novo- 64%, persistent stress urinary incontinence (SUI)- 59%, pain and urinary retention- 40%. In 25% of the cases, vaginal erosion of the tape was diagnosed. In the majority of patients, more than one complication constituting an indication for re-operation was diagnosed.

Pelvic floor ultrasound was performed twice: before the removal of the sling and 3 months post surgery. During the examination, the patient was placed in a semi-sitting position (with bladder-filling volume of 300 ml). A 3.6–8.3- MHz vaginal transducer with a beam angle of 160° was placed at the level of the external urethral orifice, aligning the axis of the probe with the patient's body axis. The urinary bladder, urethra, suburethral vagina and the pubic symphysis with the interpubic disc were visualized in the median sagittal plane and the length of the hypoechoic core of the urethra was measured. The following parameters were assessed: urethral position (measured as the distance between the bladder neck and the horizontal line connecting with the lower edge of symphysis pubis [H]) at rest, during contraction of the pelvic floor muscles (Fig. 1), and during the Valsalva maneuver (lasting min. 5 seconds) (Fig. 2). When the bladder neck was localized above the lower edge of symphysis pubis, urethral position was signed "+", when it was localized below this point: as "-".

Figure 1. Urethral position at rest and during contraction of the levator ani.

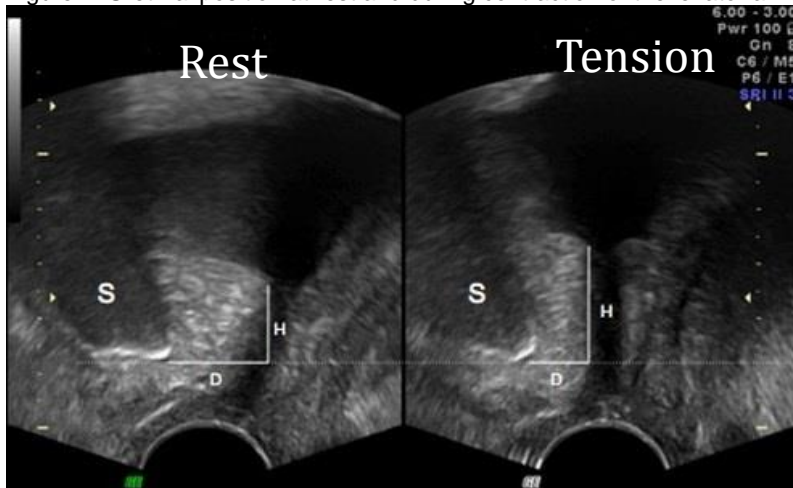
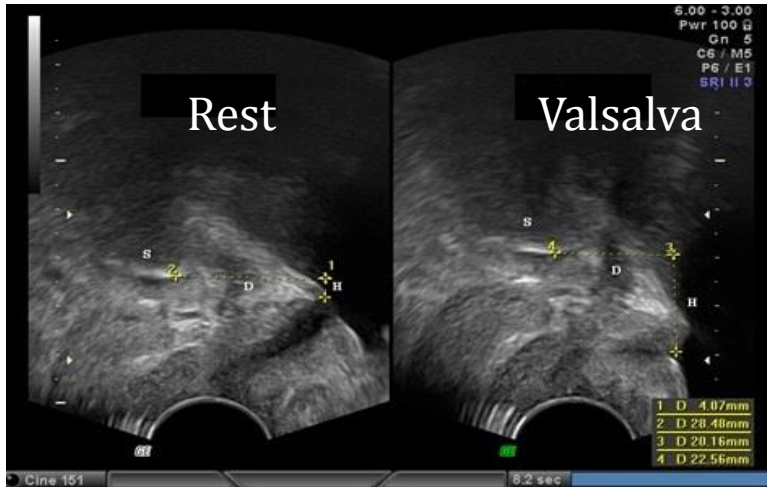


Figure 2. Urethral position at rest and during the Valsalva maneuver.



## Results

In patients who underwent tape excision, a statistically significant descent of the urethra (bladder neck) in relation to the lower edge of symphysis pubis was observed. Statistically significant change in urethral mobility was proved during the Valsalva maneuver. No difference was seen in urethral mobility during the contraction of the pelvic floor muscles. (Table 1).

Table 1. The impact of tape excision on urethral position. Data are given as mean, (SD).

Urethral position	Pre surgery	Post surgery	Difference	p-value
At rest (mm)	6,73 (6,80)	5,32 (6,71)	-1,41 (4,71)	0,003
During contraction of the levator ani (mm)	10,94 (7,90)	11,40 (7,98)	0,45 (5,26)	0,390 (0,360)*
During the Valsalva maneuver (mm)	-3,91 (9,46)	-6,78 (8,09)	-2,86 (5,88)	<0,001

P-values for T-Test for mean in paired samples; in brackets: Wilcoxon test.

## Interpretation of results

Sling excision resulted in a lower position of the urethra at rest and increased urethral mobility during the Valsalva maneuver. These findings show that tape removal causes alterations in the function of the lower urinary tract.

## Concluding Messenger

Removal of the sling is associated with changes in urethral position and mobility. The fact should be taken into consideration when insertion of a new sub-urethral sling is planned.

## Disclosures

**Funding:** none **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics Committee:** Ethics Committee of Medical University of Warsaw **Helsinki:** Yes **Informed Consent:** Yes