

## DOES THE TVT CONTRACT OR MIGRATE OVER TIME?

### Aims of Study

The tension-free vaginal tape (TVT) is a widely used procedure for the surgical treatment of Genuine Stress Incontinence (GSI). Longterm followup data however remains scarce, even from experienced centers (1). It has been speculated that scar tissue formation leads to shortening and stiffening of the tape. This hypothesis seems to be supported by anecdotal data from attempts to remove or dissect TVT tape in situ in the retropubic space and periurethrally (2).

This study was designed to longitudinally investigate postoperative tape position and mobility, using translabial ultrasound imaging of the implant and surrounding tissues.

### Methods

141 consecutive patients were evaluated in the setting of an external yearly audit over a period of four years. A standardized questionnaire was filled in and a cough stress test performed. The patient was then asked to void for independent flowmetry. Ultrasound was performed translabially for residual urine and tape position and mobility. The TVT is highly echogenic and easily identified in the midline dorsal to the urethra (3), most commonly in its middle third.

Images were taken at rest and on Valsalva and the position of the superior tape margin determined relative to the inferoposterior symphyseal margin and the bladder neck. Coordinates were obtained in a craniocaudal or vertical (v) and dorsoventral or horizontal (h) direction (see Figure). Total tape mobility was calculated from horizontal and vertical mobility on Valsalva manoeuvre.

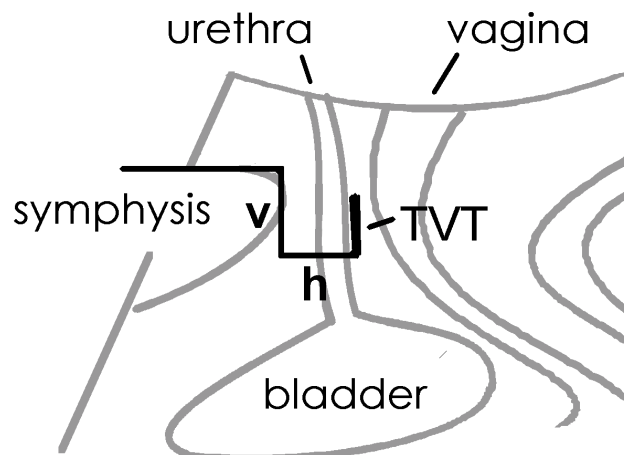


Figure 1: Measurement of tape position on translabial ultrasound (midsagittal view). V= vertical coordinate, h= horizontal coordinate relative to the inferoposterior margin of the symphysis pubis.

### Results

Of 141 women, 119 were seen in the first year, 74 in the second year, 35 in the third year and 13 in the fourth year postoperatively, resulting in 241 assessments overall. Four patients had undergone tape division for retention and were excluded from further analysis. 64 women were seen at least twice postoperatively, at an average interval of 1.6 (1-3) years. At the last visit, the tape was found to be more caudal relative to the symphysis pubis, both at rest ( $p < 0.001$ ) and on Valsalva ( $p = 0.01$ ). Tape mobility however did not change much: vertical mobility was nonsignificantly reduced, horizontal mobility slightly increased ( $p = 0.045$ ) and total mobility virtually unchanged (see Table 1). The position of the bladder neck showed similar characteristics: lower position at rest ( $p = 0.05$ ) and on Valsalva ( $p = 0.1$ ) but very little change in descent (see Table 2).

	1st postoperative visit	last postoperative visit	p=
Tape position at rest (v)	11.2 (7.6) mm	8.6 (7.3) mm	<0.001
Tape position on Valsalva (v)	-2.6 (7) mm	-4.6 (6.3) mm	0.01
Vertical mobility	14.1 (5.7) mm	12.9 (6.1) mm	n.s.
Horizontal mobility	5.2 (6.5) mm	6.9 (5.9) mm	0.045
Total mobility	16.3 (5.9) mm	15.9 (5.9) mm	n.s.

Table 1: Position of the tape relative to symphysis pubis, at rest and on Valsalva, and tape mobility, n= 64.

	1st postoperative visit	last postoperative visit	p=
Bladder Neck at rest	27.2 (5.0)	25.6 (6.9)	0.05
Bladder Neck on Valsalva	6.9 (12.9) mm	4.6 (11.6) mm	0.1

Table 2: Position and mobility of the bladder neck at first and last postoperative visit after TVT placement (n= 64).

### **Conclusions**

The tension- free vaginal tape does not appear to contract or shorten over time. On the contrary, it appears to slowly migrate caudally relative to the symphysis pubis, together with the surrounding tissues. Per year, this "give" amounts to approximately 1.5 mm.

As surrounding tissues are displaced at a very similar rate, this seems to indicate that the tape moves with the prolapse rather than signifying true "migration". Tape mobility on Valsalva, a measure of elasticity, remains largely unchanged.

### **References:**

- 1 *BJOG* 108(4):414-419, 2001.
- 2 *Int.Urogynecol.J.* 11(Suppl 1):S29-29, 2000.
- 3 *Neurourol. Urodyn.* 19 (4) 2000, 393- 394