

A CASE CONTROL SERIES OF TVT VERSUS MONARC SUBURETHRAL TAPES

Hypothesis / aims of study

Following the success of the tension- free vaginal tape, there has been considerable interest in modifications of the original technique. Arguably the most important new development is the transobturator approach for placement of a suburethral sling, and initial results have been promising (1). We therefore performed a case-control series on 114 women who underwent Monarc transobturator tape placement or Tensionless Vaginal Tape surgery to correct urodynamically confirmed stress urinary incontinence.

Study design, materials and methods

122 women underwent TVT or Monarc implantation by or under the supervision of the senior author, with identical tensioning technique (no cough test). All were followed up by standardized interview, free uroflowmetry and translabial 3D ultrasound, supine and after voiding, using a GE Kretz Voluson 730 system with 7-4 MHz curved array volume transducer with an acquisition angle of 70 degrees. At least three volume datasets (at rest, on Valsalva and pelvic floor contraction) were obtained per patient and later analyzed using GE Kretz 4D View software (Version 2.1) on a PC, following a previously published methodology for assessing tape placement and mobility (2).

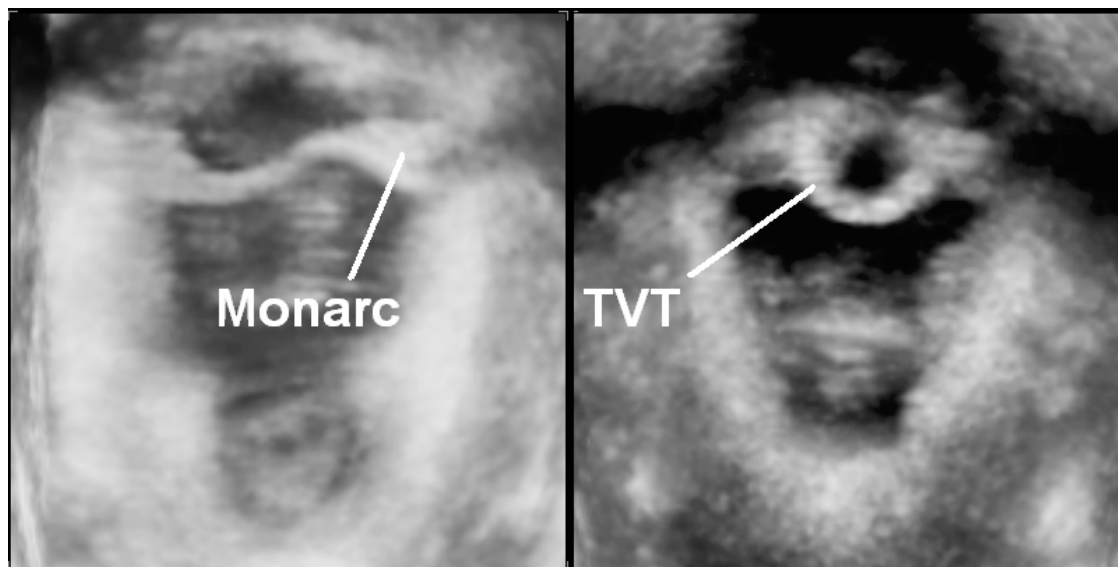


Figure: In the axial view, Monarc and TVT are easily distinguished, with the Monarc forming a more or less horizontal bar across the levator hiatus, approximately at the level of insertion of the pubovisceral muscle.

Results

Matching required removal of 8 datasets from the original group of 122 women, leaving 114 patients (58 Monarcs, 56 TVTs). The resulting groups were well matched for patient age, previous incontinence surgery, length of follow-up, preoperative voiding and urge incontinence as well as concomitant anterior repair (see Table 1).

Table 2 shows subjective outcomes and symptoms as reported at followup. There were significant or near- significant differences for patient satisfaction ($P= 0.014$), subjective overall cure/ improvement ($P=0.0018$) and the symptoms of urge incontinence ($P= 0.06$) and poor stream ($P= 0.03$), with all favouring the Monarc group. Maximum flow rate centiles decreased

nonsignificantly less after Monarc (-8 vs. -13 MFR centile points). On imaging the Monarc appeared more proximal, both at rest (P= 0.006) and on Valsalva (P= 0.002), and remained farther from the symphysis pubis on Valsalva (P= 0.01), see Table 3.

	Monarc	TVT	P=
Patient age (years)	56.5 (12.3)	58 (SD 12.2)	0.5
prev. incontinence surgery	8/58	11/56	0.4
Length of followup (years)	0.74 (0.37)	0.75 (0.32)	0.8
Preoperative voiding (max. flow rate centile*)	30.2 (29.3)	24.8 (23.4)	0.3
Preoperative urge incontinence	40/58	30/56	0.12
Concomitant anterior repair	16/58	17/51	0.5

Table 1: Results of matching: Both groups were well matched for the six parameters used for this purpose. Fisher's exact test. Standard deviations in parentheses. * according to Liverpool Nomogram.

	Monarc	TVT	P=
Cure/ improvement	55/58	41/56	0.0018
Subjective satisfaction	47/58	33/56	0.014
Stress incontinence	14/58	10/56	n.s.
Urge incontinence	27/58	36/56	0.06
Symptoms of voiding dysfunction	19/58	27/56	0.12
Poor stream	6/58	15/56	0.03

Table 2: Subjective cure/ improvement, satisfaction and symptoms of bladder dysfunction after Monarc and TVT surgery (Fisher's exact test).

	Monarc	TVT	P=
tape position at rest (vertical)	1.43 (0.57)	1.11 (0.59)	0.006
tape position at rest (horizontal)	1.77 (0.43)	1.69 (0.47)	n.s.
tape position, Valsalva (vertical)	-0.30 (0.77)	-0.68 (0.47)	0.002
tape position, Valsalva (horizontal)	1.15 (0.61)	0.85 (0.58)	0.01
total mobility (cm)	1.97 (0.76)	2.04 (0.63)	n.s.
Change in max. flow rate centile	-8 (31.7)	13.1 (24.4)	n.s.

Table 3: Results of ultrasound imaging and postoperative flowmetry after Monarc and TVT surgery. Imagign data given in cm relative to the inferoposterior margin of the symphysis pubis.

Interpretation of results

While any case control series has obvious limitations, this methodology is useful for generating pilot data prior to a randomized controlled trial, simplifying power calculations and helping with selection of outcome parameters. Based on the results of this case control series, it appears that TVT and Monarc differ in some important aspects. Both seem equally effective in curing stress incontinence, but the Monarc is located more proximally and does not come as close to the symphysis pubis on Valsalva. It seems to have less effect on voiding than the TVT, and there appears to be less urge incontinence and/ or voiding dysfunction postoperatively. Possibly as a consequence, subjective satisfaction and overall subjective cure/ improvement rates were significantly higher after Monarc.

Concluding message

In this case control series of 114 women after Monarc and TVT surgery, the transobturator tape was associated with higher patient satisfaction and subjective cure/ improvement at approximately 8 months' followup.

References

- 1 Eur Urol 2004; 45: 203-207.
- 2 Am J Obstet Gynecol 2003; 188: 950- 953.
- 3 Ultrasound Obstet Gynaecol 2004; 23: 615-625