

IS THE COUGH TEST NECESSARY? A CASE CONTROL SERIES OF TWO TECHNIQUES OF TVT ADJUSTMENT**Hypothesis / aims of study**

The Tension- free vaginal tape (TVT, Gynecare) is probably the most successful new anti-incontinence procedure of the last decade. The original technique (1,2) relies on a cough test in the conscious patient to adjust sling tension. Competitor implants and techniques do not consistently use this technique and seem to result in good success rates. In this case control series of patients after TVT implantation, the authors compared two adjustment techniques. One surgeon used a technique without the cough test (Group A), leaving enough space between implant and urethra to pass Metzenbaum scissors at rest, the other utilized the cough stress test (Group B) as in the originally described technique.

Study design, materials and methods

Patients after TVT surgery performed by one of the two authors (Group A, Surgeon 1, Group B, Surgeon 2) were invited for review in the context of external postoperative audits conducted by the first author. Follow- up appointments consisted of a standardized interview, free flowmetry and translabial ultrasound for estimation of residual urine, position and mobility of tape and bladder neck relative to the inferoposterior margin of the symphysis pubis (3). The ultrasound technique has recently been shown to have good interobserver repeatability (%CV of 0.08 to 0.26 for tape position and %CV of 0.12 for total tape mobility) (3). Matching was undertaken for age, preexisting urge incontinence, preoperative maximum flow rate centile, concomitant anterior repair and length of followup.

Parameter	Group A (n=54)	Group B (n= 52)	P
Age	57.8 (12.3)	58.2 (13.3)	n.s.
Preexisting Urge Incontinence	38/ 53	40/ 52	n.s.
Preoperative MFR Centile	25.6 (23.6)	36.2 (31.2)	n.s.
Concomitant Anterior Repair	17/54	13/52	n.s.
Length of followup	0.74 (0.32)	0.65 (0.23)	n.s.

Table 1: Results of matching**Results**

54 women in Group A were compared to 52 women in Group B. Matching resulted in well balanced groups. There were no significant differences between groups for subjective cure (77% in Group A vs. 83% in Group B), satisfaction rate (83% vs. 84%), subjective symptoms of stress (20% vs. 19%) or urge incontinence (63% vs. 64%), frequency and nocturia. There were less symptoms of voiding dysfunction overall in Group A (46% vs. 69%, $p = 0.019$); see Table 2 for a breakdown of symptoms. The incidence of recurrent urinary tract infection was similar in both groups.

Parameter	Group A (n=54)	Group B (n= 52)	P
Hesitancy	6/54	13/52	0.062
Poor Stream	13/54	32/52	0.028
Stop- start voiding	8/54	18/52	0.018
Straining to void	3/54	4/52	n.s.
Incomplete emptying	11/54	20/52	0.041

Table 2: Symptoms of voiding dysfunction, X2 test.

Postoperative free flowmetry indices did not differ significantly. In both groups there was a reduction in maximum flow rate centiles (MFR centiles), and although this was more marked in Group B (-17.3 vs. -13.1 centile points), this difference was not significant. Data on residual urine was incomplete and therefore not analyzed. Table 3 gives parameters of tape position and mobility which differed markedly.

Parameter	Group A (n=54)	Group B (n= 52)	P
x-r	1.10 (SD .59)	.72 (SD .73)	0.005
y-r	1.67 (SD .36)	1.63 (SD .36)	n.s.
x-s	-.69 (SD .47)	-.47 (SD .59)	0.038
y-s	.83 (SD .58)	.81 (SD .54)	n.s.
tape mobility	2.04 (SD .64)	1.56 (SD .65)	< 0.001

Table 3: TVT position and mobility on ultrasound (2-sample T test). X-r, y-r: vertical and horizontal distance between tape and inferoposterior symphyseal margin at rest, x-s and y-s, same parameters on Valsalva. Tape mobility: difference between positions at rest and on Valsalva.

Interpretation of results

This case control study of two methods of tape adjustment implies that using a cough test for tape adjustment during TVT insertion may result in unnecessary tightening of the tape. Avoiding the cough test and placing the TVT more loosely than originally described seems to have no negative effect on patient satisfaction or subjective symptoms of stress incontinence. There may even be a benefit in terms of reducing symptoms of voiding dysfunction although free flowmetry parameters did not vary significantly in this study. The difference in individual technique between these two single surgeon series was clearly evident on ultrasound imaging, with parameters of tape position and mobility showing an implant that was more mobile on Valsalva in the group without cough test.

Concluding message

Individual variations in technique such as the use of the cough stress test for tape adjustment may have a significant impact on symptoms and tape position and mobility. However, success rates and patient satisfaction do not seem to be greatly affected, a finding that again emphasizes the wide range of clinical safety and efficacy of modern suburethral slings.

References

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