

TENSION-FREE VAGINAL TAPE WITH OR WITHOUT CONCOMITANT GENITOURINARY PROLAPSE REPAIR UNDER SPINAL AND GENERAL ANAESTHESIA

Hypothesis / aims of study

Tension-free vaginal tape (TVT) is a minimally invasive surgical procedure for the treatment of female stress urinary incontinence with efficacy comparable to the Burch colposuspension. As genitourinary prolapse commonly occurs together with stress urinary incontinence, it becomes logical to combine the prolapse surgery with TVT at the same setting. Although the original description used local anaesthesia for the TVT procedure(1), this form of anaesthesia may not always provide adequate pain relief and is not suitable when concomitant major operations have to be performed. This study aims to (a) evaluate the outcome of TVT performed in combination with genitourinary prolapse repair and compare it with those of TVT alone, (b) assess the feasibility of performing the TVT procedure under spinal and general anaesthesia.

Study design, materials and methods

The records of patients undergoing TVT operation for urodynamic stress incontinence, with or without concomitant genitourinary prolapse surgery, in a regional hospital in Hong Kong from January 1999 to September 2003 were retrospectively analysed. The TVT procedure was performed as previously described(1) except that all were performed under spinal or general anaesthesia. After inserting the prolene tape, it was placed loosely in contact with the mid-urethra and the ends were cut without applying any tension to the tape. Prolapse operations were performed before the TVT procedure. These included vaginal hysterectomy for uterine prolapse, anterior colporrhaphy for cystocele and posterior colpoperineorrhaphy for rectocele. Only patients with a follow-up of at least 6 months and who had urodynamic tests postoperatively were included in the analysis. Urinary retention was defined as a residual urine volume of over 150ml. Objective cure was defined as continence at the postoperative urodynamic study. Subjective cure, improvement and failure were defined as complete dryness during stress, occasional leakage during stress, and unchanged or worsened leakage during stress respectively. Statistical analysis was performed using the t test for continuous variables, and the Chi-square test or Fisher's exact test, where appropriate, for categorical variables. A p value of <0.05 was considered statistically significant.

Results

From January 1999 to September 2003, 22 patients underwent TVT procedure alone. Fifteen TVT with concomitant surgery for genitourinary prolapse were performed (4 vaginal hysterectomy together with anterior colporrhaphy and posterior colpoperineorrhaphy, 8 vaginal hysterectomy and anterior colporrhaphy, 3 anterior colporrhaphy). All the TVT were performed as primary continence operations. The characteristics of the patients, the operations and the cure rates of the two groups are shown in Tables 1, 2 and 3 respectively. Table 1-- Characteristics of patients undergoing TVT procedure with or without prolapse surgery^a

Characteristics	TVT alone (n=22)	TVT + Prolapse surgery (n=15)	P value ^b
Mean age (years)	61 (38-80)	69 (58-83)	<0.05
Mean parity	4 (1-7)	4 (1-8)	NS
Mean body mass index	26 (21-33)	26 (20-32)	NS
Postmenopausal (%)	16 (73)	15 (100)	NS
Mean incontinence symptoms' duration (years)	7 (1-18)	3 (1-8)	<0.05
Stress incontinence (%)	15 (68)	12 (80)	NS
Mixed incontinence (%)	7 (32)	3 (20)	NS
Mean follow up (months)	22 (6-51)	19 (7-40)	NS

^aNumbers in parenthesis are the range, unless otherwise noted

^bNS: not significant

Table 2—Characteristics of TVT operations with or without prolapse surgery^a

Characteristics	TVT alone (n=22)	TVT + Prolapse surgery (n=15)	P value ^b
Mean operating time ^c (minutes)	31 (23-45)	147 (50-305)	<0.05
Mean blood loss (ml)	89 (20-300)	423 (100-1400)	<0.05
Spinal anaesthesia (%)	15 (68)	4 (27)	<0.05
General anaesthesia (%)	7 (32)	11 (73)	<0.05
Mean days of indwelling catheter postoperatively	0.4 (0-1)	2.7 (1-7)	<0.05
Mean hospital stay (days)	2.4 (2-4)	5.7 (2-13)	<0.05

^aNumbers in parenthesis are the range, unless otherwise noted

^bNS: not significant

^cIncluded time of prolapse surgery where appropriate

Table 3—Cure rates of TVT operations with or without prolapse surgery

	TVT alone (n=22)	TVT + prolapse surgery (n=15)	P value ^a
Objective cure rate (%)	17 (77)	12 (80)	NS
Subjective cure rates			NS
-cure (%)	16 (73)	12 (80)	
-improvement (%)	5 (23)	3 (20)	
-failure (%)	1 (4)	0 (0)	

^aNS: not significant

Statistical analysis showed that the objective and subjective cure rates in the 2 groups were independent of the type of anaesthesia.

There was one bladder perforation by the TVT needle in the TVT and prolapse surgery group. Urinary retention occurred in one patient after TVT alone and three patients after TVT and prolapse surgery. There was one retropubic haematoma discovered on day 9 after a TVT operation. The patient presented with urge symptoms and a retropubic mass was found. It was managed conservatively with spontaneous resolution of the symptoms and the mass. There was no statistically significant difference in the complication rates between the 2 groups.

Interpretation of results

The characteristics of the two groups of patients were similar except for the higher average age but shorter history of incontinence symptoms in those undergoing TVT with prolapse surgery than those undergoing TVT alone. The TVT and prolapse surgery group showed longer operating time (which included both the TVT and the prolapse operation), larger amount of operative blood loss, longer time for postoperative catheter drainage and hospital stay. A larger proportion of patients underwent the TVT and prolapse operations under general anaesthesia than the TVT group. The cure rates of the TVT operations were similar in the 2 groups and were independent of the type of anaesthesia. The cure rates in this study were comparable to most of the results reported in the literature. The complication rates were not different in the 2 groups of patients undergoing TVT with or without prolapse surgery.

Concluding message

TVT is an effective and safe operation for the treatment of female urodynamic stress incontinence. It can be combined with genitourinary prolapse repair with similar efficacy maintained. It is feasible to perform the TVT operation under spinal or general anaesthesia without a need for demonstrating intraoperative continence. This has the advantage of providing better pain relief, offering an additional choice of anaesthesia to the patients and allowing other major operations to be performed at the same setting.

Reference

- (1) An ambulatory surgical procedure under local anaesthesia for treatment of female urinary incontinence. *Int Urogynecol J* 1996;7:81-6