

EFFICACY OF TVT IN THE TREATMENT OF STRESS URINARY INCONTINENCE: MEDIUM-TERM (1-4 YEARS) OUTCOME RESULTS OF 104 CONSECUTIVE WOMEN

Aims of Study

Morbidity and costs associated with traditional surgical interventions for stress urinary incontinence (SUI) have recently revived clinical interest in less invasive techniques. The tension-free vaginal tape (TVT) procedure, first introduced by Ulmsten in 1996, is a minimally invasive intervention which can be performed under local anesthesia, on a day-care basis, allowing the majority of women to be discharged home the same day, or the day after surgery. The present study was conducted to assess the medium-term (1 to 4 years) outcome results of the first 104 TVT procedures carried out in our medical center and to evaluate the safety of the procedure.

Methods

A total of 104 incontinent women with urodynamically proven SUI were enrolled. All patients underwent meticulous clinical evaluation, which included a complete history and physical examination, urinary questionnaire, voiding diary, pad test, physical exam, Q-tip test and a full urodynamic evaluation. Multichannel urodynamics were performed according to the recommendations of the International Continence Society. Genuine Stress Incontinence (GSI) was defined as the involuntary loss of urine when the intravesical pressure exceeded the maximum urethral closure pressure in the absence of detrusor activity.

One experienced urogynecological surgeon who learned the procedure in Sweden and was personally guided by Ulmsten carried out all operations. The TVT procedure was performed in strict accordance with the technique and instruments described by Ulmsten et al. [1], with the exception of the anesthesia mode. Our patients preferred regional blockade to local anesthesia and therefore underwent epidural anesthesia.

Post-operatively the women were scheduled to be evaluated at 1, 3, 6 and 12 months and thereafter annually. At each visit, history, focused examination with a full bladder, voiding diary, pad test, uroflow and post-void residual urine were obtained. All patients underwent a repeat urodynamic evaluation 3-6 months after surgery.

Statistical analysis was carried out using the *t*-test for continuous data or χ^2 for categorical data. Data are summarized as mean \pm SD, or percentage according to the variables.

Results

104 women with urodynamically confirmed SUI were prospectively enrolled. The mean age and parity of the patients were 62.4 ± 10.6 years and 2.6 ± 1.4 , respectively. 89 (86%) patients, 29 (33%) of whom were on hormone replacement therapy, were postmenopausal. 25 (24%) women had a previous hysterectomy and 3 (3%) had had anti-incontinence surgery. All patients had subjectively significant SUI. 58 (56%) patients also had concomitant urge incontinence.

Five (5%) bladder perforations occurred at the very beginning of the study due to inadvertent insertion of the applicator. All were identified during routine intra-operative cystoscopy. Five (5%) other patients had increased intraoperative bleeding, necessitating vaginal tamponade. Blood transfusions were not necessary for any of the patients.

The mean hospital stay was 3.9 ± 2.5 days. Most patients who underwent TVT only could be released from hospital the day after the procedure. However, 60 (58%) patients underwent concomitant urogenital prolapse repair that required longer hospitalization.

26 (25%) patients had immediate postoperative voiding difficulties necessitating catheterization for 3-10 days; none required long-term catheterization.

The mean follow-up period was 27 ± 11 months (range: 1-4 years). Postoperatively, 6 (6%) patients had mild persistent SUI. However, urodynamic evaluation revealed "asymptomatic GSI" in 18 (17%) other patients. The clinical significance of this urodynamic finding in an asymptomatic patient is unclear. It is quite possible that subjective SUI will be developed in time. Of the 58 patients who had preoperative urge incontinence, 34 (59%) still had persisting symptoms after operation. Six (6%) other patients developed *de-novo* urge incontinence. None of the patients had any clinical or urodynamic evidence of bladder outlet obstruction.

Conclusions

In conclusion, the TVT operation is a minimally-invasive surgical procedure with good medium-term cure rates. This is good news, especially when considering the rather poor objective cure rates of another minimally-invasive technique, i.e. the laparoscopic Burch colposuspension. However, longer follow-up is needed to establish the long-term outcomes of this technique.

References

1. Ulmsten U, Henriksson L, Johnson P and Varhos G (1996): An ambulatory surgical procedure under local anesthesia for treatment of female urinary incontinence. *Int Urogynecol J* 7:81-86.