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ORIGINAL ARTICLE

A prospective study of surgeon and patient-perceived outcome following transobturator tape insertion for treatment of urodynamic stress incontinence

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KEYWORDS
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Summary
Introduction: Transobturator tape (TOT) placement for stress incontinence (USI) is recommended following failure of conservative therapy. The literature shows that in the short-term efficacy is comparable to tension-free vaginal tape (TVT) and open colposuspension (OC). The study aim was to report a large consecutive cohort undergoing TOT insertion by a single surgeon specifically for both surgeon- and patient-perceived outcome.
Patients and methods: Over 4 years at our institution 98 women underwent TOT insertion by a single surgeon. All women had preoperative urodynamics, 79% had type I and 21% type IIa USI. Perioperative and outpatient follow-up data were prospectively collected. Patient-perceived outcome was assessed using a mailed validated questionnaire.
Results: Results are similar to other published series. Median operative time was 19 min (15—30) and blood loss 21 mls (15—60). Self-catheterisation was necessary for 13 patients. Vaginal perforation occurred in two patients. At follow-up (mean 7.1 months) 86/93 (92%) patients were dry and 23 (26%) women reported urinary symptoms. 80 (81%) women responded to the questionnaire (mean 18 months) and 54 (68%) describing complete cure.
Conclusions: This large single-surgeon series confirms the safety and efficacy of TOT and illustrates the difference between surgeon and patient-perceived outcome. Results obtained are comparable to previously published series for TOT, TVT and OC.

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Introduction

The integral or mid-urethral theory of the female pelvic floor and urethral closure mechanism was proposed by Petros and Ulmsten [1] and has been the basis upon which many of the newer treatments for urodynamic stress incontinence (USI) have been developed. The idea that a loss of mid-urethral support is a causative factor in female USI led to the use of synthetic mid-urethral tapes which became popular because of ease of placement and excellent outcomes. The first of these was the tension-free vaginal tape (TVT) initially reported in 1996 [2] and subsequently shown to be comparable in both the short and medium-term to previously accepted ''gold standard'' operations for USI such as open colposuspension and pubo-vaginal slings [3,4].

Following the success of the TVT, Delorme developed an alternative route of insertion of a mid-urethral tape via the transobturator route (TOT) [5]. The theory behind this was the avoidance of blind needle passage through the retropubic space and reduction of the risk of bladder, vascular or visceral injury. Since the original description many different techniques and technologies have evolved but the general principle of mid-urethral support via a trans-obturator placed tape is common to all. Both the short- and longer-term outcomes of TOT appear to be comparable to TVT [6–8]. Despite this, many of the outcome measures differ between studies and most large series are multi-centre trials. The aim of this paper is to report a large series of TOT procedures from a single-centre all performed by the same surgeon (ACT) in the setting of a UK teaching hospital.

Patients and methods

Consecutive patients already selected for TOT placement were enrolled in the study. Data were collected and entered prospectively into a Microsoft Excel database. All patients underwent a pre-operative urodynamic study (UDS) and these were performed according to ''Good Urodynamic Practice'' guidelines published by the International Continence Society [9]. USI was graded according to the classification suggested by Blaivas [10].

The surgical technique was based on Delorme's original description and uses the ''outside-in'' approach [5]. All patients had TOT placement under general anaesthetic, and received per-operative intravenous antibiotic prophylaxis. The Obtryx (Boston Scientific) tape and introducers were used. All patients were placed in an exaggerated lithotomy position, using the Lloyd–Davies leg supports. The bladder is catheterised and drained. Hydrodissection is then performed using a total of 20 mls of saline via a syringe and needle to open out the plane between the vagina and urethra on either side. A midline mid-urethral incision of 1.5 cm is then made in the vagina, so that the fourth or fifth digit can be inserted. Two small skin incisions are also made lateral to the labia major, at the level of the clitoral hood. The plane between the vagina and urethra is then opened out laterally using scissors until the inferior pubic ramus is felt. The tape introducers are then placed, from outside to in, going through the skin incisions at the top of the thigh. As the points pass through the obturator membrane a 'pop' is felt. The introducer tip is then palpated by the surgeons finger and brought through to the vaginal. This process is then repeated on the contralateral side. The lateral fornices of the vagina should then be checked for inadvertent perforation of the vagina. The tape is then hooked onto the introducer and pulled through the vaginal incision, along the line of the introducer path and out of the thigh incisions. The length of the tape is then adjusted with no tension on the urethra. In our series a Mercer arterial clip was placed between the urethra and tape, and the tape was pulled on either side so that it fitted snugly onto the clip. The outer sheath of the tape was then removed, the tape trimmed flush with the skin incisions, and the Mercer clip finally removed. The skin incisions are closed with 4 0 vicryl rapide, and the vaginal incision with 2 0 vicryl. The catheter is then removed and inspected for blood clots/evidence of bleeding. When the patient has been returned to the ward, she is observed by the ward nursing staff, and following the first two voids, a post micturition

Table 1 Preoperative urodynamic findings.

Measurement	Median	Range
Cystometric capacity (mls)	400	150–800
Max voiding pressure (cm H_2O)	18	0–50
Max flow (mls/s)	20	0–50
Compliance (ml/cmH_2O)	205	0–600
Urine loss	50	6–120
Voiding dysfunction		
Detrusor overactivity	Urge incontinence	
12 (12%)	12 (12%)	
Urinary stress incontinence classification		
Grade 1		79 (81%)
Grade 2a		19 (19%)