

Study of inside-out technique of trans-obturator tape for treatment of stress urinary incontinence in women with utero-vaginal prolapse

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ABSTRACT

Background: Assessment of the success rates and complications of inside-out technique of Trans-Vaginal Tape (Obturator) (TVT-O) for treatment of stress urinary incontinence (SUI) in women with utero-vaginal prolapse.

Materials and Methods: A total of 30 consenting subjects with SUI and utero-vaginal prolapse were subjected to TVT-O surgery. These subjects were closely monitored for complications and success rate of surgery up to 1 year of surgery.

Results: Urinary tract infection (16.67%) was the most common early post-operative complication. Groin pain (23%) was the most common late post-operative complication while *denovo* urgency developed in 3 (11.54%) subjects. Majority (88.46%) of subjects had total improvement at 3month follow-up while 100% subjects had total improvement at 12 month follow-up with a "definitely improved quality-of-life."

Conclusion: The TVT-O (inside-out) appears to have performed favorably as a safe and effective surgery for SUI associated with utero-vaginal prolapse.

Key Words: Stress urinary incontinence, trans-vaginal tape-obturator, utero-vaginal prolapse

INTRODUCTION

Urinary incontinence often becomes a clinical problem for the aging women as the trauma of childbirth, the development of other acute and chronic illness and the loss of estrogenic stimulation at menopause weaken pelvic support and diminish the amount of normal homeostasis reserve available to cope with the stress placed on the bladder. Stress urinary incontinence (SUI) with urine loss occurring during periods of increased abdominal pressure such as sneezing, coughing or exercise resulting from incompetent closure of the urethra and bladder neck has been reported in as many as 40% of women after menopause. It is often associated in pure form or as mixed incontinence (urge with stress incontinence) in women with utero-vaginal prolapse when it usually does not respond well to medications or physiotherapy alone. The minimally invasive option of trans-vaginal tape (TVT) introduction with utero-vaginal prolapse surgery has satisfactory results in this group of women.^[1-9]

This pilot study attempted to assess the safety and efficacy of inside-out technique of TVT-obturator (TVT-O) for treatment of SUI in women with utero-vaginal prolapse.

MATERIALS AND METHODS

A total of 30 subjects with genuine SUI (diagnosed subjectively on the basis of history of SUI and objectively on demonstration of urinary spurt on coughing with a comfortably full bladder after reposition of cystocele) with varying degree of utero-vaginal prolapse that were to be taken for surgical management of prolapse were enrolled after counseling. Menstrual, obstetric, past, personal and medical history was elicited and detailed examination including study of vitals, general examination, systemic examination, per speculum examination and per vaginum examination was done. A post-void residual urine volume

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assessment was done. Urge incontinence was excluded by history and urinary tract infection (UTI) was excluded by urine analysis. Subjects with senile vaginitis were advised pre-operative local estriol application for a minimum of 2 weeks to improve the condition of the vaginal mucosa.

The subjects were posted for TVT-O surgery along with the necessary concomitant surgery for utero-vaginal prolapse. Prophylactic antibiotics (broad spectrum) were given. The indwelling Foley's catheter was removed on the 5th post-operative day if associated anterior colporrhaphy was performed and on 2nd post-operative day if no anterior colporrhaphy was performed. The post-void residual urinary volume was measured. A post-void residual value of less than 100 ml was considered as normal and the subjects were discharged with the advice of follow-up visit at 14 days after surgery, 3 months and 12 months after surgery.

RESULTS

The mean age of our subjects was 48.8 years while the mean parity was 3.8.

Table 1 presents the baseline characteristics of our subjects-50% of the subjects were post-menopausal, 83.3% had third degree utero-vaginal prolapse while 96.7% had associated cystocele, with the majority (46.6%) having second degree cystocele.

Table 2 shows the average time taken for the procedure was 7.8 min. False passage with vaginal mucosal penetration in the para-urethral area was noted in 6.67% cases while there was no case of hemorrhage or bladder injury.

Table 3 shows that three subjects (10%) had evidence of urinary retention. Two subjects who had undergone para-vaginal repair for + 3 cystocele had improvement after re-catheterization for 48 hrs followed by catheter removal after clamping while one subject had to undergo re-surgery (loosening of tape on 7th post-operative day) for over-correction. A total of five subjects had UTI (three who had urinary retention also), one had vaginal wound sepsis with pyrexia and dehiscence while the other had only UTI. Majority of the study subjects stayed in the hospital for 4-8 days after surgery considering that they had simultaneous vaginal hysterectomy with anterior colporrhaphy and posterior colpo- perineorrhaphy. Two subjects – one who had wound sepsis with dehiscence and pyrexia and the other who needed a loosening of the stitch had a post-operative stay of more than 8 days. These two also required re-admission.

Table 4 shows that 10 (38.54%) subjects had complaints (groin pain, de-novo urgency, dyspareunia) at the 3 months

Table 1: Baseline characteristics

Characteristics	Present study (n=30) (%)
Menopausal status	
Premenopausal	15 (50)
Menopausal	15 (50)
Degree of utero-vaginal prolapse	
First	01 (3.3)
Second	04 (13.3)
Third	25 (83.3)
Associated cystocele	
Absent	3 (3.3)
Present	
First degree	2 (6.6)
Second degree	14 (46.6)
Third degree	11 (36.6)
	16 (33.3)

Table 2: Intra-operative details

Intra-operative details	Present study (n=30) (%)
Time taken (mean in min)	7.8
Problems encountered	
False passage	2 (6.67)
Hemorrhage	0
Bladder injury	0

Table 3: Post-operative details

Post-operative details	Present study (n=30) (%)
Post-operative complications	
Fever	01 (3.33)
Urinary tract infection	05 (16.67)
Retention of urine	03 (10.0)
Wound infection	01 (3.33)
Duration of hospital stay	
<4 days	01 (3.33)
4-8 days	27 (90)
8-12 days	02 (6.6)
Need for readmission	02 (6.6)

Table 4: Follow-up

Follow-up	Present study (n=30) at 3 months (n=26) (%)	Present study (n=30) at 12 months (n=20) (%)
No complaints	16 (61.54)	17 (85)
Post-operative complaints	10 (38.54)	03 (15)
<i>Denovo</i> urgency	03 (11.5)	0
Tape erosion	01 (3.8)	0
Groin pain	06 (23.1)	01 (5)
Dyspareunia	04 (15.4)	02 (10)
Lost to follow-up	04	04
Not completed 12 months post-operatively	-	06

follow-up while only 3 (15%) had some complaints at the 1 year follow-up. The subject with tape erosion, groin pain, dyspareunia and *de-novo* urgency was managed by tape excision and medical therapy. The other two subjects with *de-novo* urgency were managed by medical therapy alone and reported improvement in symptoms. Four subjects were lost to follow-up while six had not completed 1 year post-operatively at the time of culmination of the study.

Table 5 shows that at the 3 months follow-up– 23 subjects reported total improvement in SUI subjectively while three who had *de-novo* urgency reported partial improvement. On examination with a comfortably full bladder, none of the 26 subjects showed any evidence of SUI. The 20 subjects who were available for the 1 year follow-up did not have any subjective or objective evidence of SUI. These 20 subjects reported a “definitely improved quality-of-life” at the 1 year follow-up.

DISCUSSION

The baseline characteristics, mean time taken for surgery and intra-operative complications of our study subjects were quite similar to the study of Lim *et al.* and Abou-Elala *et al.* who used the traditional TVT-O.^[10,11] The immediate post-operative complications noted in our study were similar to those noted by Lim *et al.* and Quinlan *et al.* using the traditional TVT-O. Our *de-novo* urgency rates (11.5%) were similar to those noted by Teo^[12] (11.3%) (range being 2% by Lim and Quinlan^[13] to 13.9% by Biggs *et al.*^[14]). The vaginal erosion rate in our study was 5% (range being 2% by Teo to 4% by Ross *et al.*^[15] and 13.8% by Deval *et al.*^[16]). Groin pain was seen in 23% of our subjects

at 3 months (24.4% at 6 months by Lim *et al.*, 15% by Ross *et al.*) while it was seen in 3.8% of our subjects at 12 months (3.7% by Lim *et al.*). Subjective improvement was noted in 88.46% subjects at 3 months (92% by Lim *et al.*) and 100% subjects at 12 months in our study.

CONCLUSION

Our results indicate that tension-free vaginal tape-obturator procedure is a safe and effective treatment for SUI associated with utero-vaginal prolapse. The short and medium term objective and subjective success rates appear comparable with the traditional Burch colposuspension and the retropubic TVT (tension free vaginal tape) procedure. The overall complication rate is low, satisfaction is high and quality-of-life improved after treatment. The TVT-O appears to have performed favorably as a safe and effective alternative to the other traditional treatments for SUI associated with utero-vaginal prolapse.

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Table 5: Results

SUI results	Present study (n=30) at 3 months (n=26) (%)	Present study (n=30) at 12 months (n=20) (%)
Subjective change in SUI		
Improvement		
Total	23 (88.46)	20 (100)
Partial	03 (11.54)	0
None	0	0
Recurrence	0	0
Objective change in SUI		
No SUI	26 (100)	20 (100)
Change in quality-of-life		
Definitely improved	23 (88.46)	20 (100)
Improved	03 (11.54)	0
Slightly improved	0	0
No change	0	0
Worsened	0	0

SUI: Stress urinary incontinence

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