

Early Experience with Transobturator Tape in Management of Female Stress Urinary Incontinence.

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ABSTRACT

Introduction: Female stress urinary incontinence (SUI) is a fairly common problem, with widely varying prevalence rates primarily due to inconsistencies in the definitions of SUI and also due to differences in the populations studied. Surgery is the definitive treatment for women who have failed a trial of conservative treatment. Although hundreds of different surgical procedures have been described, and published in literature, the ideal surgical technique that is simple, inexpensive and easy to learn and perform, with high efficacy needs yet to be established. One of the procedures, the transobturator sling (TOT), which is a subfascial sling, is a new, simple and most promising surgical technique with a good outcome.

Methods: This is a prospective observational study undertaken in 20 patients of stress incontinence who underwent a TOT with outside-in technique between Jan 2010 and Jan 2012. Various outcomes were recorded and patients were followed up for a period of at least 1 year post surgery.

Results: Out of 20 patients, satisfactory outcome of TOT was observed in 85% of cases. A total of 17 patients were completely satisfied, whereas 3 patients were partially satisfied. There were a few procedure-related complications which could be managed either intraoperatively or during the follow up.

Conclusions: The transobturator tape (TOT) is an effective treatment of SUI with high patient satisfaction and less morbidity. However, a larger study and longer follow up is recommended to verify our initial results.

Keywords: outcome; stress urinary incontinence; transobturator tape.

INTRODUCTION

Stress urinary incontinence (SUI) has a significant impact on the quality of life for many women. Estimated prevalence varies widely due to inconsistencies in the definitions of SUI and differences in the populations studied with other various factors (like illiteracy, social background, religion, culture economy and access to medical facility etc)¹. Prevalence for urinary incontinence in Europe is nearly 30% in women aged 30–60 years, in which half of the women are SUI².

In 2001, Delorme introduced the outside in transobturator (TOT) sling procedure³. Since its introduction, the TOT popularity has been increased because of a better safety profile and a comparable success rate of between 85 to 95%⁴. In 2003, De level presented the inside out TOT technique with an aim to minimize vaginal and urethral injury⁵. It is clear that TOT is the best option for the management of SUI; however such studies have hardly been conducted in

underdeveloped world, where the incidence of SUI is thought to be high.

METHODS

The study is a prospective observational study to see the outcome in patients of SUI treated with transobturator sling. The study comprised patients attending the Surgery OPD of Shree Birendra Hospital and the study period was from Jan 2010 to Jan 2012. An analysis of the patient character, intra- and postoperative complications and patient satisfaction was made. All patients attending surgery OPD, who complained of involuntary passage of urine on coughing, laughing, or any other condition that increased intra-abdominal pressure, were subjected to a thorough history taking and physical examination. All patients underwent a preliminary cystoscopy examination before surgery and a 1 hour pad test was conducted in the same sitting

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in all patients. All patients were classified into three grades based on the severity of symptoms¹⁹ (Table 1).

Patients with SUI1 and SUI2 were included in this study. No patient with SUI3 was encountered and thus the study does not include one. Patients with urge incontinence, co-existing pelvic organ prolapse or any other gynecological problem, patients who had previous surgery for stress incontinence and neurovegetative disorder were excluded from the study, patient with no regular follow up at least for 1 year also excluded in this study. Routine urodynamic study was not performed due to unavailability of the facility.

Table 1. Classification of SUI

SUI Grades	Symptoms
Grade one (SUI1)	Loss of urine during excessive strains
Grade two (SUI2)	Loss of urine during minor strains
Grade three (SUI3)	Loss of urine at rest

All the patients diagnosed with SUI were explained about the available modes of treatment. Patients, who were willing for an operative procedure, were finally included for this study. After pre-anesthetic evaluation, surgery was planned on a given date and patient was admitted the night before. An informed consent was taken. Part preparation was done in the morning of surgery.

Operative Procedure

All cases were operated by the same urologist. The patient was placed in an extended lithotomy position under spinal anesthesia. A 16 F Foley’s catheter was introduced and the balloon inflated with 10 ml of distilled water and a gentle traction was applied on the catheter to measure the length of urethra by palpation. The periurethral space was dissected with the help of a small vertical incision placed half an inch below the external meatus. The specially designed indigenous pair of curved needles one for each side with eye at the tip to hold a prolene sling (tape) with pore size of 1.28 mm was introduced through the safe entry point which was the point of intersection between a vertical line drawn from the insertion of adductor longus and the horizontal line drawn from the tip of the clitoris. Small incisions placed in the groins at the safe point of entry driving in the needle with tape to emerge at the periurethral space created cutting through the tissue in the inferior ramus of pubis. The tape was drawn out through the tip of the needle introduced from the opposite groin with posterior wrapping and

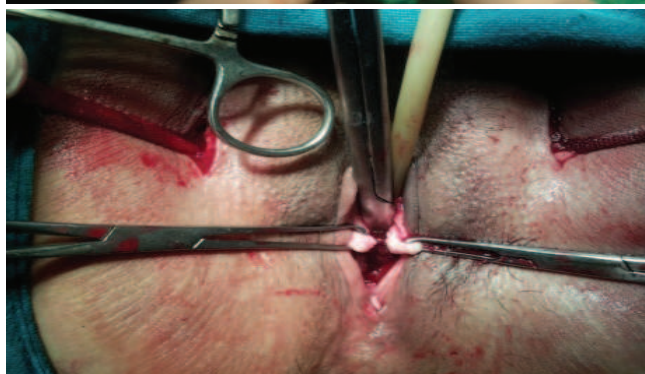
anterior lifting the urethra (Picture 1). The time taken for the surgical procedure was recorded. Patients were discharged when they passed urine and confident to look after themselves. The period of their hospital stay was recorded.

All patients were given extensive advice at the time of discharge which specifically stressed to avoid squatting and intercourse for 6 weeks. They were told to use chair-style toilet and not to squat while micturating and defecating. They were also advised for the requirement of an adequate fluid intake to prevent urinary infections and constipation. Patients were followed up at 2 weeks after surgery and then at 1 month, 3 months, 6 months and 1 year. At the follow-up visits, they were specifically asked about the relief of symptoms, any complication (like chronic groin pain) and their overall satisfaction from the surgical outcome.

RESULTS

A total of 20 patient with history of genuine SUI were included in this study. Out of 20 patients included in the study, 17 (85%) slings were fully satisfied and 3 (15%) were partially satisfied (in terms of incontinence





after 48 hours in 6 patients, whereas 3 patients needed prolonged catheterization for more than 3 days. Out of 20 patients, 13 (65 %) were discharged within 48 hours of surgery, 4 (20%) between 48 to 72 hours, and 3 (15%) had to stay more than 3 days due to urinary problem.

DISCUSSION

Stress urinary incontinence (SUI) is a common problem in middle aged women especially in those with inadequate nutrition and history of multiple vaginal deliveries and can cause embarrassing deterioration of quality of life. Various surgical techniques have shown a successful outcome in treating SUI. In 1996, Ulmsten and Petros developed Tension free Vaginal Tape (TVT) which revolutionized the treatment of SUI. TVT has become one of the popular techniques for treating SUI with a success rate between 84-92%⁶. However due to the potential complications the question for the best method of treatment continues to exist. Since the discovery of the minimal invasive procedure in 1996 by Ulmsten and Petros the ideal surgical technique that is simple, inexpensive, easy to learn and perform with minimal invasive and high efficacy is yet to be established.

Table 1. Characteristics of patients (n=20)

Mean age	51.36 year(35-70 years)
Premenopausal	7 (35%)
Postmenopausal	13 (65%)
Primiparous	6 (30%)
Multiparous	14 (70%)
Vaginal delivery	16 (80%)
Cesarean section	4 (20%)
Abdominal hysterectomy	4 (20%)
Mean duration of symptoms	3.22 years

and sexual function). Most patients had normal delivery and only four patients had a past history of a Cesarean section. Four (20%) patients in our study gave history of previous abdominal hysterectomy and none of the other patient gave history of previous surgery and other intervention.

The mean duration of symptoms was 3.22 years. Regarding the severity of SUI, 7(35%) patients had SUI1 and 13 (65%) patients had SUI2. The mean duration of surgery was 25.36 minutes (20 to 40 minutes).

There were few procedure-related complications which were managed intra and postoperatively, which were UTI in two cases and retention of urine in one case. Catheter was removed after 36 hours in 11 patients and

Table no. 2: Study outcome (n=20)

SUI severity (SUI1)	7 (35%)
SUI severity (SUI2)	13 (65%)
Complete satisfaction	17 (85%)
Partial satisfaction	3 (15%)
Mean duration of surgery	25.36 minutes
Minimum hours for catheterization	36 hours
Minimum hours for analgesia	24 hours
Minimum period for Hospitalization	48 hours
Complication	3 cases

Large volume of literature published worldwide gives

various outcomes of the different procedures described. TOT application in this study had an 85% success rate, 17 out of 20 patients being fully satisfied. Delorme in 2001 reported on 40 patients in whom TOT was applied for the first time, 39 patients had no incontinence post surgery and 1 patient had improvement in symptoms. DeTayrac in 2004 reported a 1-year cure rate of 84% with the TOT procedure⁷. Spinosa et al, in 2005 reported complete and partial satisfaction rates of 92.3% and 4.2%, respectively in 117 patients⁸. In 2007, Latthe *et al.* quoting their experience in Britain in a series of 135 patients reported the complete cure and improvement in 89.6% and 8.8%, respectively⁹. Taweel *et al.*, reported a 92% improvement rate after 12 months and 85% after 24 months and a patient satisfaction rate of 88% at 1 year¹⁰.

The mean age of the patients operated for SUI in this study was 51.36 years (35–70 years), which is similar to Taweel series (52 ± 9 years; range 34–70 years). However the mean age is lesser than Moore *et al* (56.8 years)¹¹ and Isabelle *et al* (57.9 years)¹².

In this study, the mean duration of surgery was 25.36 minutes. Purnichescu *et al.* reported a mean duration of 23 minutes¹³. Taweel reported mean surgery duration of 18 minutes. Moore *et al.* reported the mean operative time for sling placement as 12.4 minutes.

Out of 20 patients studied in this study, 13(65%) were discharged within 48 hours of surgery, 4 (20%) between 48 and 72 hours and only 3 (15 %) had to stay more than 3 days. Purnichescu *et al.* from France reported mean duration of hospitalization in the cases of isolated TOT as 1.25 days. Isabelle *et al.*, for women who had only TOT procedure, reported the mean hospitalization as 2.2 days. In the postoperative period, only 3 (15%) patients developed transient complication. None of the patient in this study had vascular, neural, or bowel injury.

In one of the largest worldwide multicentre studies to date the Monarc TOT sling was shown to have an objective cure rate in 91.8% in 1 year¹⁴. TOT sling is subfascial avoiding the retropubic space and lies in a hammock type position under the urethra which may be the reason for the lowering incidence of obstruction and voiding dysfunction¹⁵. There were no complaints of groin pain in our cases. One of the meta-analysis published in BJOG in 2007 by Latthe *et al.*, showed that the outside-in technique is usually not associated with this specific symptom¹⁶. Obstructive voiding dysfunction

is the most commonly reported complication of some other mid urethral sling placements like TVT. As far as sexual activity is concerned, there is no significant change in patients' sexual life. Darai et al, conducted a prospective randomized trials comparing TOT sling with TVT and have shown equivalent cure rate but there is lower complication in TOT approach¹⁷.

In the transobturator approach, the path of the tape, crossing the obturator foramen, muscle, and fascia, reproduces the natural sub urethral suspension by reinforcing the rotational pivot point, restoring continence while sparing the retropubic space¹⁸. Sparing the retropubic space may preserve periurethral nerve fibers that may be associated with urethral function and stability. In this study there were no control and comparison.

CONCLUSIONS

The transobturator approach is an effective treatment of SUI with low morbidity. TOT for SUI1 and SUI2 has high cure rate and good patient satisfaction in our setup. However, a larger sample size, a longer follow up and comparisons with other surgical techniques is needed to verify the initial promising results.

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