

An Evaluation of use of Transobturator Tape in the Current Surgical Management of Female Stress Urinary Incontinence

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Abstract

Introduction: Stress urinary incontinence (SUI) can significantly impair the quality of life. A variety of treatments, both medical and surgical, have been used to manage it. The transobturator sling, which is a subfascial sling, is relatively a new surgical technique with minimal access.

Objective: To assess the role of transobturator tape procedure in surgical management of female Stress Urinary Incontinence (SUI) in terms of post-operative result, cost patient acceptance and complication.

Method: 32 patients of SUI were included in study those who were treated surgically by TOT - sling procedure in the department of gynaecology, IGIMS, Patna from July 2007 to September 2011.

Result: Success rate of transobturator tape was seen in 29 (90.62%) of patients of which 26 (81.26%) patients were completely satisfied and 3 (9.37%) patients were partially satisfied. 3 (9.37%) were not satisfied with the surgical out come. The procedure related complications were few and could be managed during the procedure itself.

Conclusion: The TOT approach is an effective treatment for stress urinary incontinence with low morbidity and it has all potential to be the new Gold standard in the treatment of female stress urinary incontinence.

Keywords: Sling, Stress urinary incontinence, Transobturator tape

INTRODUCTION

The international continence society (ICS) defines the symptoms of urinary incontinence as complaints of any involuntary loss of urine.¹ Stress Urinary Incontinence (SUI) has an observed prevalence between 4% and 35%.² SUI is the involuntary leakage of urine during exertion (exercise or sudden movements such as coughing, sneezing and laughing). SUI is often seen in women after middle age (with repeated pregnancies and vaginal deliveries).³ In genuine stress incontinence, the assumption is that the intrinsic structure of the sphincter is intact and normal. However, it loses efficiency because of excessive mobility and loss of support. Thus the anatomic feature of genuine SUI is consistently that of hyper mobility or lowering of the position of vesico - urethral segment or a combination of these two factors. Numerous

risk factors for SUI have been identified. Aging, obesity and smoking appear to have consistent causal relationships with the condition; where as the role of pregnancy and child birth remain controversial.² Postmenopausal atrophy also cause stress incontinence and urethral syndrome.⁴ Treatment of SUI also consists of conservative Pelvic floor muscle training (PFMT) and Pharmacological treatment (Imipramine, Duoxetine, Estrogens). The Principal treatment of SUI is proper suspension and support of the vesico-urethral segment in a normal position. There were numerous approach including retropubic colposuspension, slings and urethral bulking injection.⁵ Then came tension free vaginal tape (TVT) in mid to late 1990'S. But TVT was associated with vascular injuries and bowel perforations. In order to avoid these complications delorme⁶ introduced the trans-obturator tape (TOT).

In TOT placement a small incision is placed in the groins, in the vagina and in the urethra and the mesh is placed under the urethra in correct position without having to pass the needle blindly through the retro-pubic space, as was done in trans vaginal tape (TVT). The operative time is significantly shorter in the TOT sling and the risk of bladder injury and of post-operative urinary retention is also considerably lower than other sling procedures.⁷ The TOT is a tension free sling as the resting urethral angle is not changed by the procedure, nor is it necessary to correct urethral hypermobility.⁸ One of the most important and well recognised advantage of TOT as compared to the other mid urethral sling procedure is the low rate of urge incontinence.⁹ As far as the sexual activity is concerned, there is no significant changes in the sexual life as regards the frequency of intercourse and pain during penetration. There is significant decrease in coital incontinence.¹⁰

MATERIALS & METHOD

This retrospective study was conducted on 32 patients of clinically and investigation proven SUI, who were managed in the department of Gynaecology, IGIMS, Patna from 2007 to 2011. The Patients underwent a thorough history taking, general physical examination, systemic and local examination. All baseline and special/specific investigations (Urodynamic study, Cystoscopy) were conducted on the patients depending upon each patient's clinical scenario and the need for the specific investigation. TOT Procedure was performed in all patients. All the patient undergoing TOT sling procedure were informed about the ease, simplicity and safety of the procedure. All the patients in our study had TOT sling procedure performed under general anaesthesia but spinal anaesthesia and local anaesthesia can also be used. The patients were placed in lithotomy position. Parts were draped and Foleys catheterisation done to empty the bladder. Two vertical lines are drawn on each side of the labial fold. At the base of the clitoris a horizontal line is drawn. The points at which these lines intersect each other correspond to the obturator membranes and subsequent entry of the TOT needle through the obturator foramen. After retracting the labial fold an incision of 1.5 cm is made 1cm proximal to the external urethral meatus in the anterior vaginal wall. Just behind the urethra a lateral incision is made on both sides elevating the vaginal wall and taking care not to injure urethra and bladder. Any bleeding can be managed by pressure only. Ischiopubic rami is felt with the index finger and TOT needle is introduced from outside in with finger acting as a guide. Tip of the TOT needle is brought out from the incision in the vaginal wall and threads of the TOT tape are fed through the eye of the TOT needle. TOT needle is withdrawn through the same path taking along with it one end of the TOT tape through the incision in groin. Same procedure

is repeated on other side also. The urethral segment is correctly placed in relation to the second part of the urethra maintaining the distance of one instrument thickness between the tape and the urethra. Both ends of TOT tape are cut just beneath the skin incisions in the groin. Vaginal cavity is packed with betadine soaked gauze, which is to be removed on 1st postoperative day. Patients were advised to start normal daily routine activities after discharge from the hospital, to maintain local hygiene, to avoid straining and lifting heavy weights for 3-4 weeks, to avoid sexual activity for 4-6 weeks. In our studied patient's follow-up period varied from 3-36 months. Observation were made regarding the postoperative results assessed by clinical examination, cough stress test (full bladder), uroflowmetry and post void residual urine volume.

RESULT

The total number of patients evaluated in our study was 32. The age of the patients operated for SUI under this study ranged from 25-64 yrs.

All the patients admitted were married and had children. 30 (93.75%) were multiparous and 2 (6.25%) were primiparous.

Post operative results of all patients who were subjected to TOT sling procedure are briefed in Table 3.

After the catheter removal there were no major complications seen in TOT sling procedures. The complications with the procedure are summarized in Table 4.

Out of 32 patients included in the study, 22 (68.75%) were premenopausal and 10 (31.25%) were postmenopausal. The age of patients operated for SUI under this study ranged from 25-64 years (Table 1). Out of the total 32 TOT slings applied, only 2 (6.25%) were in primiparous women and 30 (93.75%) were in multiparous women (Table 2). Preoperatively all the patients had clinically

Table 1: Age of the patients

Age	N	%
25-34	1	3.12
35-44	21	65.62
45-54	8	25
55-64	2	6.25

Table 2: Parity of patients

Parity	N	% of age
<2	2	6.25
2-4	26	81.25
>4	4	12.50

proven SUI. Postoperatively Foleys catheter was removed to see whether the patients were continent or not. Out of 32 patients included in the study, 29 (90.62%) slings were successful at 36 months and 3 had surgical failure (9.37%) in terms of persistent of SUI post sling fixation. Total success rate of transobturator sling fixation in our study was 90.62%. No apparent cause could be found for failure of surgery in rest 3 cases (Table 3). There were few procedure related complications which were managed intra operatively and thereafter TOT were applied and after the repair of the injury intra-operative cystoscopy was done (Table 4). There was intra operative urethral injury in one case. There was no major complications and minor complications such as urgency, dysuria, fever, haematuria and groin pain present subsided over a few days. TOT seems to be a surgery with immediate relief of symptoms and a greater patient satisfaction. In this study 90.62% of patients were completely satisfied with surgical outcome, whereas 9.37% were partially satisfied and 9.37% were not satisfied (Table 5) with the surgical outcome and these where the patients in whom surgery was not successful.

DISCUSSION

In our study 30 (93.75%) patients were multiparous (more than 2 delivery) and 22 (68.75%) patients were premenopausal

Table 3: Post operative results

Result	N	%
Fully continent	29	90.62
Mild symptoms (LUTS)	7	21.87
Poor result	3	9.37

Table 4: Post operative complication

Complication	N	%
Obstructive Voiding	06	18.75
Urgency	06	18.75
Dysuria	05	15.62
Groin pain	05	15.62
Fever	03	9.37
Haematuria	02	6.25
Acute Retention	01	3.12
Urethral injury	01	3.12

Table 5: Patient satisfaction

Satisfaction	N	% age
Satisfied	29	90.62
Partially satisfied	3	9.37
Unsatisfied	3	9.37

and 10 (31.25%) were post-menopausal. 28 (87.5%) patients were having the chief complaint of involuntary loss of urine on straining and 23 (71.87%) patients had duration of symptoms less than 3 years. 11 (34.37%) patients were having mild cystocele preoperatively which was resolved after TOT sling procedure. Of the 32 patients who were operated (under gone TOT procedure) 29 (90.62%) patient were continent post operatively after removal of foleys catheter, 7 (21.87%) had (LUTS) lower urinary tract sypmtoms. No major intra-operative complications or injury occurred in our studied patients. In our study follow up was ranged from 10-36 months. Our result were comparable to other studies¹¹ in which follow up ranged between 12-33 months. The operative time in our study was 30-40 mins. As compared to other study¹² the operative time in that study for the TOT sling procedure was 15 mins.

CONCLUSION

The TOT sling procedure is an effective treatment for SUI with low morbidity. There are enough data in literature to support the use of the transobturator approach as a better alternative to the retropubic access, and it has all the potential to be the new gold standard in the treatment of female SUI.¹³ TOT is a simple procedure with short hospital stay. It is very important to diagnose SUI and to rule out other causes of incontinence because only the former one (Genuine SUI) is improved by TOT sling and other types may not improve or even get worsened by this procedure.

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