



## EFFICACY AND SAFETY OF TRANSOBTURATOR POLYPROPYLENE HERNIA MESH FOR FEMALE URINARY STRESS INCONTINENCE

### Urology

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### ABSTRACT

**Introduction:** Normal continence is controlled by the nervous system and involves co-ordination between bladder, urethra, urethral sphincter, and pelvic floor. Incontinence occurs when the relationship among the above components is compromised, either due to physical damage or nerve dysfunction(1). Stress incontinence is a frequently encountered problem in females. Transobturator tape(TOT) was created by Delorme in 2001, where the sling through the obturator foramen and is used to surgically treat stress incontinence(2). .

**Aims and Objectives:** 1) The present study is being undertaken to study the efficacy and safety of transobturator polypropylene hernia mesh in the treatment of female stress urinary incontinence. 2) To assess the level of satisfaction with the technique.

**Material and Methods:** Female patients presenting with stress urinary incontinence as subjective symptoms in the out patient department were selected for the study. All patients underwent an urodynamic study before surgery that confirmed stress urinary incontinence. All the patients underwent TOT sling procedure, patients were informed about the ease, simplicity and safety of the procedure compared to other previous surgeries.

**Observation:** A total of 20 female patients were included in our study, who underwent a TOT procedure. The postoperative results and complications were studied. Preoperative and postoperative results were also compared.

**Conclusion:** TOT is a safe and effective procedure with a low rate of complications for stress urinary incontinence.

### KEYWORDS

#### INTRODUCTION:

Stress incontinence is a condition that can be objectively diagnosed by urodynamic examination, but is also a subjective symptom. During some actions, such as coughing, the increase in abdominal pressure causes the prolapse of bladder neck and urethral compression that result in urine leakage, which is defined as stress urinary incontinence(SUI). A normal anatomy and function of pubocervical fascia supports the urethra and bladder neck and avoids the occurrence of SUI. An incompetence in this support results in the occurrence of SUI. Therefore, the surgical treatment modalities take the greatest place in the management of SUI<sup>(3,4)</sup>. Suburethral tension-free vaginal tape(TVT) first described by Ulmsten and Petros in 1995<sup>(5)</sup>, was a prototype, minimally invasive intravaginal suburethral sling operation and accepted worldwide as the standard surgical treatment for SUI for a long time<sup>(6)</sup>. Although TVT is an effective treatment with the success rates ranging from 81% to 95%<sup>(7,8)</sup>, a wide variety of complications including visceral, vessel and nerve injuries have been described. In an attempt to minimize the complications of TVT, a new mid urethral sling called TOT was created by Delmore in 2001, where the needle passers run the sling through the obturator foramen<sup>(2)</sup>.

#### AIMS AND OBJECTIVES:

- To evaluate the efficacy and safety of transobturator polypropylene hernia mesh in the treatment of female stress urinary incontinence.
- To assess the level of satisfaction with the technique.

#### MATERIALS AND METHODS:

A prospective study was done in Department of Urology, S.N. Medical College, Agra from January 2017 to January 2018. A total of 20 female patients with stress urinary incontinence, who were undergoing transobturator tape procedure for stress urinary incontinence, were included in the study. The mean age of the patients taken in our study was 44.8 years.

The patients who were clinically and investigation proved stress urinary incontinent, who underwent a thorough history taking, general physical examination, systemic and local examination, all baseline and

special/specific investigations (urodynamic study, lateral cystogram and cystoscopy) were conducted on the patient depending on each patient clinical scenario and need for the specific investigation. Written informed consent was taken from all the patients.

All the patients in our study underwent TOT sling procedure performed under spinal anesthesia. After discharge from the hospital, patients were advised to start daily routine activities, to maintain local hygiene, to avoid straining and lifting heavy weight for 3 to 4 weeks and to avoid sexual activity for 4 to 6 weeks.

	Pre-Operative	Post-Operative	p -value
No. of patients having positive Stress Test	18	3	0.0112
Total	20	20	

In our study, the patients were followed up for 6 months.

#### OBSERVATIONS:

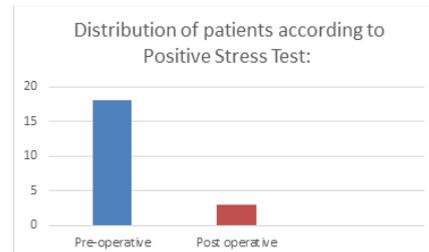


Fig. 1

	Pre-Operative	Post-Operative	p -value
Post void residual volume (ml) in mean	19.04 ml	15.87 ml	0.613

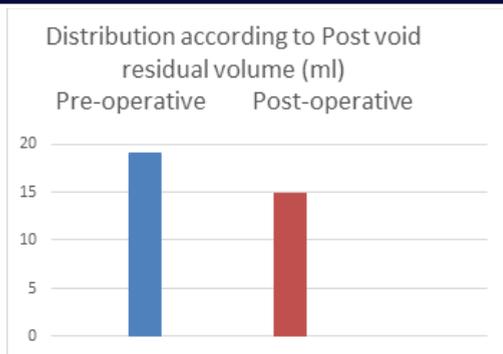


Fig. 2

	Pre-Operative	Post-Operative	p -value
Less than 3 urge episodes	14	4	0.046
More than 3 episodes	8	1	0.033

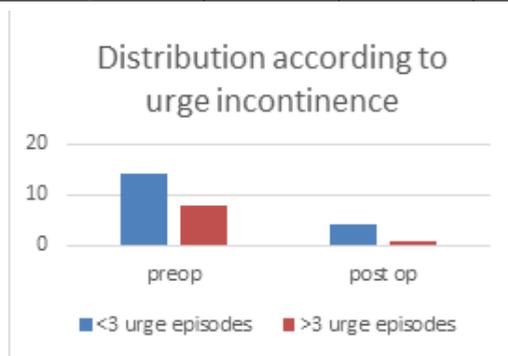


Fig. 3

	Pre-Operative	Post-Operative	p -value
Less than 3 urge episodes	11	2	0.027
More than 3 episodes	9	1	0.021

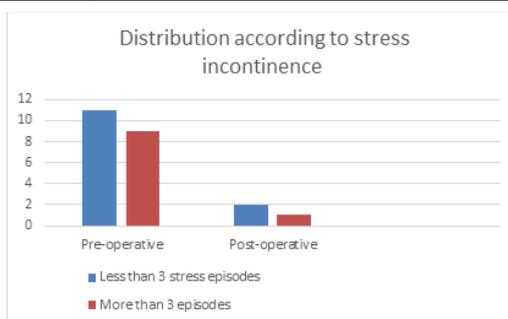


Fig. 4

	Pre-Operative	Post-Operative	p -value
Maximal flow rate (ml/s)	15.7	21.2	0.466

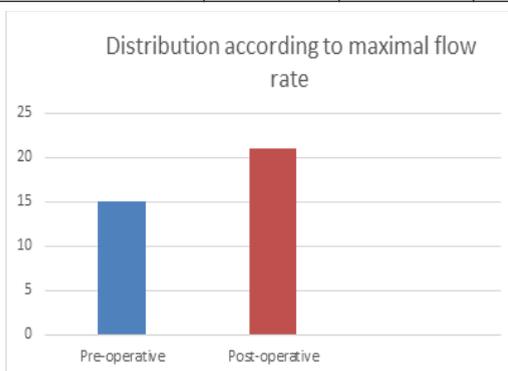


Fig. 5

Table 6-Postoperative complications of TOT procedure:

Complication	Number of patients	Percentage(%)
Urgency	-	-
Dysuria	1	5%
Fever	-	-
Haematuria	1	5%
Bladder and urethral perforation	1	5%
Bowel perforation	-	-

**DISCUSSION:**

In our prospective study, all 20 patients were diagnosed as stress urinary incontinence and underwent a TOT operation. Mean age of the patients was 44.8 years. All the patients in our study were multiparous.

The pre- and postoperative stress tests was positive in 18 out of 20 patients (90%) and 3 (15%) patients, respectively showing statistically significant difference. (p-value <0.05).

Pre and post operative values of post void residual volume showed statistically insignificant difference. (p-value >0.05)

The comparison of pre- and postoperative values of the parameters revealed that there were significant differences between the pre- and postoperative values of less than 3 urge incontinence episodes and more than 3 urge incontinence episodes. (p-value <0.05).

Statistically significant difference was seen in the pre-operative and post-operative values of stress incontinence episodes. (p-value <0.05). Statistically insignificant difference was seen in pre and post operative maximal flow rate. (p-value >0.05).

As in our study, there was no control group and our results were compared with other published studies.

Mohammed S Elsheemy et al<sup>(9)</sup> conducted a study to evaluate the safety and efficacy of a procedure using surgeon-tailored polypropylene mesh (STM) and concluded that this technique is simple, safe, effective, reproducible and economical for treating SUI.

Monika Kochar et al<sup>(10)</sup> in a study of 25 patients concluded that the suburethral transobturator polypropylene mesh sling is a safe, efficient, reproducible and low cost technique for treating SUI. No recurrence had been recorded. In all the 25 cases, none had reported with failure, thus giving 100% cure rate for SUI.

In a study by Abdelnaser K.H. Elgamasy et al<sup>(11)</sup>, 40 patients diagnosed with SUI underwent transobturator sling fashioned from the ordinary polypropylene mesh. Out of these 40 patients, 35 patients (87.5%) were cured, 2 patients (5%) significantly improved, but the procedure failed in 3 patients (7.5%).

Leonel Briozzo et al<sup>(12)</sup> in a study of 60 patients reported no vascular, nervous or bowel injury. One case of bladder injury was noted. Primary outcomes were-56.7% of the patients were asymptomatic, 25% were better and 18.3% do not refer changes. Their results confirm the effectiveness of TOT in treating female SUI with a low complication rate. The effectiveness of the technique decreases with time

The results of our study i.e. effectiveness and safety of TOT procedure in urinary stress incontinence in female, is very much similar to the above mentioned studies conducted by various authors in the past.

**CONCLUSION:**

To conclude TOT is an effective and safe procedure. Our results show the high success rate and low complication rate of TOT procedures. In our study, TOT was considered an efficient and reliable method in accordance with the success rates obtained, and a limited number of complications seems to make this method acceptable and safe for the patients with stress urinary incontinence. However, there is a need for further random prospective studies with different methods and large populations in which long-term results are reported and compared

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