



TOT for Female Stress Urinary Incontinence: Retrospective Study

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Abstract

Background: Stress urinary incontinence (SUI) significantly impacts women's quality of life. The transobturator tape (TOT) procedure is a minimally invasive surgical treatment for SUI. This study evaluates the outcomes of TOT in a cohort of patients treated at our institution.

Methods: A retrospective analysis was conducted on 14 female patients who underwent TOT for SUI between May 2022 and May 2025. Preoperative evaluations included uro-gynecologic history, physical examination, and validated questionnaires (Urinary Incontinence Severity Score [UISS] and Detrusor Instability Score [DIS]). The TOT was performed using the outside-in technique. Postoperative outcomes were assessed during follow-up visits scheduled 2-3 months post-procedure.

Results: Of the 14 patients, 11 (78.5%) attended the follow-up visit. Among these, 9 (81.8%) reported complete resolution of SUI symptoms, defined as no leakage during physical activity or involuntary leakage. Complications included one case of urinary retention necessitating reoperation to adjust the tape and one case of urinary tract infection managed with antibiotics. No perforations or significant bleeding were recorded.

Conclusion: The TOT procedure demonstrated high efficacy with a low complication rate, reinforcing its role as an effective treatment for female SUI.

Keywords: stress urinary incontinence, transobturator tape, surgical outcomes, minimally invasive surgery

Introduction

Stress urinary incontinence (SUI) is a prevalent condition characterized by involuntary urine leakage during activities that increase intra-abdominal pressure, such as coughing or exercising, affecting a significant proportion of women, particularly post-childbirth or postmenopausal. The condition can profoundly impair quality of life, prompting the need for effective treatments. Traditional approaches include pelvic floor exercises and behavioral therapies, but surgical interventions are often required for persistent cases.

The transobturator tape (TOT) procedure, introduced by Delorme in 2001,[1] is a minimally invasive mid-

urethral sling technique designed to support the urethra and restore continence. Unlike the retropubic tension-free vaginal tape (TVT), TOT avoids the retropubic space, potentially reducing complications like bladder or vascular injuries. Studies report high success rates, with cure rates ranging from 80-90%.[2,3] This retrospective study evaluates the efficacy and safety of the TOT procedure in 14 female patients treated for SUI at our institution between May 2022 and May 2025, contributing to the evidence base for its clinical application.

Methods

This retrospective study included all female patients (n=14) who underwent the TOT procedure for SUI at our institution between May 2022 and May 2025. Patients were selected based on a confirmed diagnosis of SUI via urodynamic testing and clinical assessment.

Preoperative Assessment

Patients underwent comprehensive uro-gynecologic history collection, urine analysis, and physical examination, focusing on urethrovesical junction hypermobility. Incontinence symptoms were assessed using validated Urinary Incontinence Severity Score (UISS) and Detrusor Instability Score (DIS) questionnaires. A supine stress test with a bladder volume of approximately 200 ml of sterile saline was performed, confirming a positive cough test.

Surgical Procedure

The TOT procedure was performed using the outside-in technique as described by Delorme.[1] The surgery was conducted under appropriate anesthesia.

Postoperative Evaluation

Postoperative outcomes were assessed at follow-up visits scheduled 2-3 months post-procedure. Subjective evaluations included UISS and DIS

questionnaires, a Visual Analogue Scale (VAS) for urinary symptoms (0 = no symptoms, 100 = worst possible symptoms), and patient satisfaction. Patients were asked about urinary infections, frequent urination, difficulty emptying the bladder, additional operative treatments, and leakage related to physical activity or involuntary leakage. Cure of SUI was defined as the absence of reported leakage during physical activity or involuntary leakage. Objective assessments were conducted at the hospital for 78.5% of patients, with the remaining 21.5% followed by their gynecologists.

Ethical Considerations

As a retrospective study using anonymized data, ethical approval was not required, per institutional guidelines. Patient confidentiality was maintained throughout.

Results

Of the 14 patients, 11 (78.5%) attended the follow-up visit at 2-3 months post-procedure. Among these, 9 (81.8%) reported no leakage related to physical activity or involuntary leakage, indicating a cure of SUI.

Table 1: Outcomes of TOT Procedure in 14 Patients

Outcome	Number (%)
Patients with follow-up	11 (78.5%)
Patients cured	9 (81.8%)
Complications	2 (14.3%)
- Urinary retention	1 (reoperation required)
- Urinary tract infection	1 (treated with antibiotics)
- Perforations or significant bleeding	0

Two patients experienced complications: one developed urinary retention 15 days post-operatively, resolved by reoperation to loosen the TOT, and another developed a urinary tract infection post-

discharge, managed with antibiotics. No perforations or significant bleeding were reported.

Discussion

The 81.8% cure rate observed in this study aligns with previous reports, where TOT achieved cure rates of 80-90%.[2,3] The low complication rate, with only two minor issues, supports the safety profile of TOT, consistent with findings that it has fewer bladder injuries compared to TVT.[4] The absence of serious complications like perforations or bleeding further underscores the procedure's safety when performed by experienced surgeons.

Limitations include the retrospective design, small sample size, and loss to follow-up (21.5% of patients). The short follow-up period (2-3 months) limits insights into long-term outcomes, as complications like tape erosion may manifest later. Additionally, detailed data on UISS, DIS, and VAS scores were not analyzed due to incomplete records, which could have provided deeper insights into symptom severity and patient satisfaction.

Despite these limitations, the study confirms TOT's efficacy and safety, supporting its use in SUI management. Future studies with larger cohorts and longer follow-up are needed to assess durability and late complications.

Conclusion

The TOT procedure demonstrated high efficacy and a low complication rate in this retrospective study, reinforcing its role as an effective, minimally invasive treatment for female SUI. Continued research is warranted to evaluate long-term outcomes.

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