A new technique for stress urinary incontinence without using vaginal mesh

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Abstract

Stress urinary incontinence (SUI) is a fairly common disease among women. Synthetic meshes are frequently used in midurethral sling procedures due to the high long-term success rates. Because of the publications about vaginal mesh complications in recent years, urogynecologists are turning to techniques without mesh. The purpose of this video is to show that SUI can be treated without mesh complications by utilizing the meshless urethropexy technique. A 50-year-old woman applied to our urogynecology department with complaints of incontinence. Physical examination, stress test, Q-tip test, urine test and transperineal ultrasound performed. Post-void residual urine measured. The patient completed incontinence questionnaires: urogenital distress inventory-6, incontinence impact questionnaire-7. After discussing results SUI was diagnosed. Treatment options were offered to the patient. Due to mesh complications concern the patient preferred this approach and underwent urethropexy. The steps of meshless urethropexy technique was demonstrated in this video. SUI can be treated with this approach without worrying about mesh complications, but long-term results are needed. (J Turk Ger Gynecol Assoc. 2024; 25: 277-9)

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Introduction

Urinary incontinence is a common and significant health issue among women, with prevalence reported to vary between 25-50% (1). Although various surgical techniques have been described for stress urinary incontinence (SUI), midurethral sling (MUS) procedures using synthetic mesh are the most commonly used procedure due to their high long-term success rates. Nilsson et al. (2) reported a long-term objective cure rate of 90% and a subjective cure rate of 77% for retropubic MUS.

However, vaginal mesh can lead to serious complications that negatively impact patients' quality of life. Cohen et al. (3) found that the incidence of one or more complications within 30 days after the MUS procedure was 4%. Ulrich et al. (4) reported 7% mesh extrusion/erosion, 26% de novo urgency, 25% dyspareunia, and 13% intermittent inguinal pain at the 10-year follow-up.

In recent years, attention has focused on complications associated with synthetic mesh in surgery. Following the U.S. Food and Drug Administration report in 2008, warnings regarding mesh complications were issued to hospitals in Canada in 2014 (5).

This case was selected from a cohort of 21 cases that we have performed since 2019 and in this video article, we aim to present our original technique, which does not use any mesh in the suburethral region.

Case Report

A 50-year-old G5P1 patient presented to the urogynecology department with complaints of urinary incontinence.

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Preoperative evaluation showed a positive stress test, a Q-tip test angle of 60°, and a post-void residual urine volume of 20 cc. Using transperineal ultrasound, anterior (α angle) and posterior (β angles) urethral angles were evaluated both at rest and during the Valsalva maneuver ($\Delta\alpha = 50°$, $\Delta\beta = 20°$). Urine culture was negative, and the patient had no comorbidities. Based on the diagnosis of SUI, urethropexy was indicated.

In the lithotomy position, the following steps (Video 1) were performed:

Step 1: A 1 cm^2 islet was created on the vaginal mucosa in the midurethral region. The edges of this islet were dissected from the adjacent mucosa (Figure 1), and the area was de-epithelialized with electrocautery.

Step 2: In the mid-urethral region, a first no: 1 prolene suture (yellow) and a second no: 1 prolene suture (turquoise) were used to create a handmade hammock (Figure 1). The first suture was placed in a reversed "U" shape, while the second suture was placed in a "U" shape.

Step 3: Bilateral tunnels were opened under the symphysis pubis using scissors. Prolene sutures were passed through the retropubic area with the help of guides and retrieved from the skin 2.5 cm lateral to the midline on both sides over the mons pubis. Bladder walls were inspected via simultaneous cystoscopy. After confirming the integrity of the bladder walls, the guides were removed.

Step 4: A polypropylene mesh was placed into the mons pubis 2 cm below the skin using a guide (Figure 2). Approximately 5 cm of mesh was used, and the excess was trimmed (Figure 3).

Step 5: Prolene sutures on both sides were secured with small hemoclips placed 1 cm from the ends of the mesh, preventing slippage. The sutures were then tied with 3-4 knots on the hemoclips, and the incisions were closed.

The procedure was completed in 30 minutes. On postoperative day 1, post-void residual urine was measured at 40 cc, and the patient was discharged the same day. Follow-up visits were scheduled for the first, third, sixth, and twelfth months, during which no complications were observed. At the 12-month follow-up, the stress test was negative, the Q-tip test showed 10°, and the 1-hour pad test was dry. The difference in anterior (α angle) and posterior (β angle) urethral angles during rest and the Valsalva maneuver was remeasured via transperineal ultrasound ($\Delta\alpha = 10°$, $\Delta\beta = 10°$). The patient remained asymptomatic with no signs of incontinence or complications. Written informed consent was obtained from the patient for publication of this video article and any accompanying images.

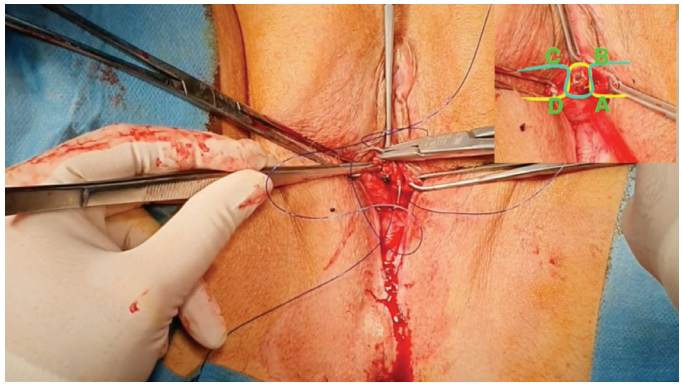

Figure 1. Suburethral mucosal island

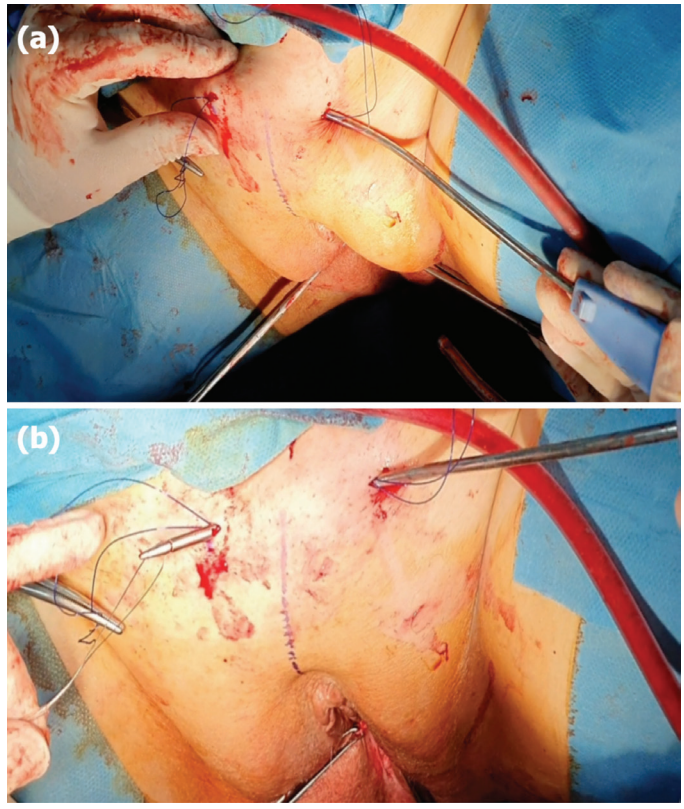

Figure 2. Insertion of polypropylene mesh with the help of guide

Conclusion

This urethropexy technique can be considered in the surgical treatment of SUI, although long-term results are still needed. While no complications were observed in our case, rare complications similar to those seen in retropubic sling procedures, such as bladder or urethral injuries and bleeding, may still occur with this technique. This approach is most suitable for uncomplicated cases of pure SUI without a history of previous SUI surgery.

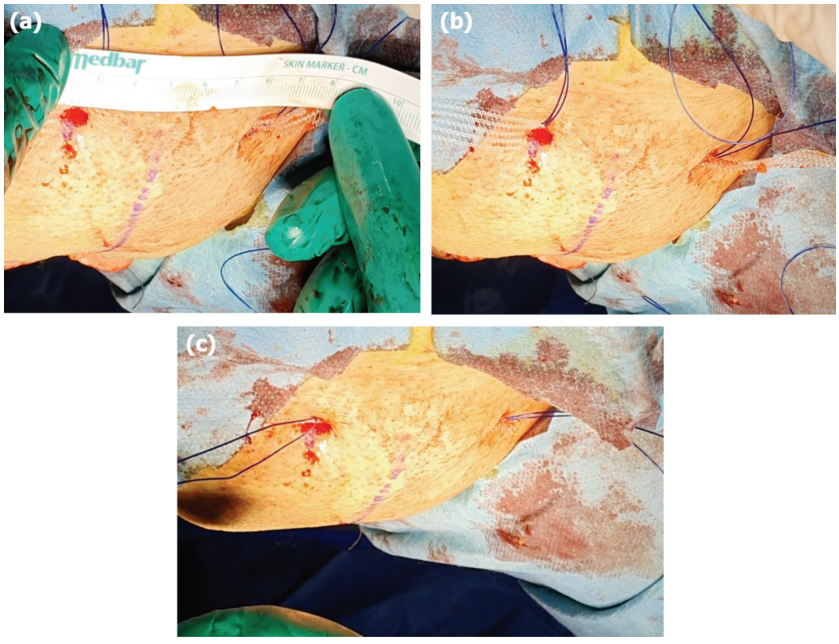

Figure 3. Representation of mesh placed into the mons pubis

Video 1.

https://www.doi.org/10.4274/jtgga.galenos.2023.2022-12-17.video1

Informed Consent: *Written informed consent was obtained from the patient for publication of this video article and any accompanying images.*

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