TURKISH JOURNAL OF UROLOGY
Turk J Urol 2019; 45(3): 230-2 • DOI: 10.5152/tud.2018.83797

FEMALE UROLOGY

Surgical Technique

Autologous transobturator midurethral sling

Alkan Çubuk, Akif Erbin, Metin Savun, Ali Ayrancı, Burak Üçpınar, Fatih Yanaral, Ömer Sarılar, Şeref Basal, Mehmet Fatih Akbulut

Cite this article as: Çubuk A, Erbin A, Savun M, Ayrancı A, Üçpınar B, Yanaral F, et al. Autologous transobturator midurethral sling. Turk J Urol 2019; 45(3): 230-2.

ABSTRACT

Objective: The aim of this study is to describe a novel transobturator midurethral sling surgery technique by using rectus abdominis fascia.

Material and methods: A 54-year-old woman complaining of urinary leakage during effort was diagnosed as pure stress urinary incontinence after detailed questioning, pelvic examination, uroflowmetry and measurement of residual urine volume. She was anxious about complications related to synthetic meshes. However, she was not interested in relatively morbid surgeries such as colposuspension and pubovaginal sling. Autologous transobturator midurethral sling was discussed with the patient. The patient approved the surgery and the surgery was planned. A 5 cm rectus fascia was harvested via suprapubic incision and non-absorbable stay sutures were placed on its' both edges. Anterior vaginal incision together with paravaginal dissection was performed, as in classical transobturator sling surgery. Groin puncture and blind dissection of adipose tissue was performed. C-shaped trocars were inserted, and advanced through groin punctures and brought up to midurethral incision by finger guidance. Stay sutures were transported via C-shaped trocars to the groin puncture in both sides. Graft was positioned on the midurethral part without any tension and stay sutures were tied to create a tissue bridge on obturator membrane. Incisions were closed and vaginal tampon was placed. Patient was discharged at the first postoperative day.

Results: At postoperative third and sixth months, patient was totally dry and did not have any voiding complaints. Small abdominal and vaginal incisions were clean, as well.

Conclusion: Autologous transobturator midurethral sling surgery is a safe, effective and feasible surgical option for stress urinary incontinence in the era which mesh-related concerns are rising. Studies with larger volume and long-term follow up periods are needed.

Keywords: Autologous; midurethral sling; stress incontinence.

ORCID IDs of the authors:
A.Ç. 0000-0001-9322-9717;
A.E. 0000-0001-7147-8288;
M.S. 0000-0003-4434-9661;
A.A. 0000-0003-3747-0869;
B.Ü. 0000-0003-0837-7614;
F.Y. 0000-0002-7395-541X;
Ö.S. 0000-0002-1273-1084;
Ş.B. 0000-0002-9463-1529;
M.F.A. 0000-0002-5007-8143

Department of Urology, Health Science University Haseki Training and Research Hospital, İstanbul, Turkey

Submitted:
20.09.2018

Accepted:
01.11.2018

Available Online Date:
21.12.2018

Corresponding Author:
Alkan Çubuk
E-mail:
alkancubuk@hotmail.com

Available online at
turkishjournalofurology.com

Introduction

Transobturator tape (TOT) and tension-free vaginal tape (TVT) with a synthetic graft material are widely used surgical procedures for the treatment of female stress urinary incontinence (SUI).[1] These procedures are the most frequently investigated surgeries and their effectiveness with long-term results and good safety profile were established with over 200 publications.[2] The use of synthetic tape materials causes mesh-specific complications such as bladder or urethral erosion, mesh migration, mesh-site infections and vaginal erosion.[3] These mesh related complications are reported up to 7% of the cases in literature.[4] Surgical interventions aiming to revise or remove the meshes, and reduce irreversible symptoms and the emotional distress on patients are needed.[5] In the last decade, the United States Food and Drug Administration (FDA) released public health notifications about meshes and classified meshes as class 3 devices (highest risk devices) for pelvic organ prolapse (POP) surgery and class 2 for SUI surgery.[6] Although FDA warnings have focused on the use of synthetic mesh in transvaginal pelvic organ prolapse (POP) surgery, after these warnings, patients, surgeons and legal communities have been increasingly questioning the use of mesh materials for SUI.[7] Patients have been unwilling to undergo mesh surgeries, and litigations related with mesh complications have increased since the FDA reports. Currently, patients

are increasingly reporting symptoms while complication rates have remained stable after midurethral sling surgery (MUSS). [8] Although current guidelines still recommend TOT and TVT, historical methods which do not involve mesh materials such as pubovaginal sling and retropubic colposuspension surgeries have been re-popularized for SUI.[9,10] Also, new techniques with autologous tissues are being discussed in the current literature. [1,9-11] Nowadays, the optimal surgical technique for SUI in patients who are unwilling to undergo mesh surgery is unknown. In this case presentation, we present an autologous transobturator midurethral sling (ATMS) procedure.

Material and methods

A 54-year-old woman admitted to our clinic complaining of urinary leakage during effort, without urgency. She had a history of seven vaginal births and did not have a history of any pelvic surgery. On pelvic examination, positive bladder stress test and urethral hypermobility without any grade of POP was detected. No frequency and nocturia was detected on voiding diary. Normal bladder capacity and normal voiding pattern were detected on uroflowmetry without any residual urine volume. She was diagnosed as stress urinary incontinence and she was reluctant to undergo surgeries performed using meshes. After discussions with the patient ATMS was preferred for her.

The operation was started with collaboration of two surgical teams; one for harvesting the graft material and one for, simultaneous transvaginal preparation (Video 1-See video from https://doi.org/10.5152/tud.2018.83797). Under general anesthesia patient was positioned in lithotomy position and prophylactic antibiotic was administrated. Labia were retracted with stay sutures and weighted vaginal speculum was placed for exposure and sterile Foley catheter was inserted transurethrally. A two centimeter vertical suburethral incision was performed on anterior vaginal wall after hydrodissection with 20 mL saline solution. Blind and sharp dissection was performed until inferior ischiopubic rami as in TOT surgery and obturator membrane was palpated. Simultaneously, a 5 x 1.5 centimeter rectus fascia was harvested via 3 cm suprapubic transverse incision, just above the symphysis pubis. After hemostasis, fascia and abdominal incisions were closed. After de-fatting the fascial graft for approximately 10 cm, two non-absorbable 2-0 polyester (Ethibond®, Ethicon) stay sutures were placed on the each corner of fascial graft.

Two small punctures were made at the level of the clitoris, on groin skin. The subcutaneous fat was blindly cleared away with Kelly clamps. C-shaped trocar was inserted via groin puncture and obturator membrane was perforated after medial rotation and trocar was palpated on the tip of index finger. Trocar was brought to the vaginal incision with the guidance of index finger. First stay suture was attached to trocars and pulled out through groin incision. The procedure was repeated and second stay suture was pulled out through groin incision on the left side. Approximately 0.5 cm distance between 2 sutures on obturator membrane was provided. Sutures were tied on adductor muscle tendon, just below the incision. Graft was located just near the ischiopubic ramus, without penetration into the obturator membrane. This procedure was repeated on the right side. Before sutures tied, graft was secured to the periurethral tissue with two absorbable sutures to avoid migration and graft folding. Tension of the graft was adjusted by placing scissors between graft and urethra. After checking midurethral position of the graft and appropriate tension, sutures on the right side were tied. Incisions were closed and vaginal tampon was placed.

Postoperative course was uneventful. On the first postoperative day, vaginal tampon and the urethral catheter were removed and the patient was discharged. Visual analog pain score was 8 at first postoperative first night, and 2 at the day of discharge.

Results

At third and sixth postoperative months patient was evaluated. She did not have any voiding complatints or incontinence. On pelvic examination, negative stress test was detected. She had an unobstructed voiding pattern on uroflowmetry with a 80 mL residual urine volume.

Conclusion

Autologous transobturator midurethral sling is a feasible and effective procedure for SUI with short-term outcomes. In the era which mesh-related concerns are accumulating, this non-mesh surgical method is a valuable option. Further long-term studies with greater number of patients are needed to confirm these outcomes.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Haseki Training and Research Hospital (2018/599).

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – A.Ç., M.F.A., F.Y., A.E.; Design – A.Ç., M.S., Ö.S.; Supervision – Ş.B., A.A., B.Ü.; Resources – A.Ç., M.F.A.; Materials – A.Ç., B.Ü., M.S.; Data Collection and/or Processing – A.A., M.S., B.Ü.; Analysis and/or Interpretation – F.Y., A.E., Ö.S., Ş.B.; Literature Search – A.C., M.F.A., F.Y.; Writing Manuscript – A.Ç., M.S., B.Ü., M.F.A.; Critical Review – Ş.B., A.E., A.A.; Other – A.A., Ö.S.

Conflict of Interest: The authors have no conflicts of interest to declare.

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DOI:10.5152/tud.2018.83797

Financial Disclosure: The authors declared that this study has received no financial support.

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