



Case report

Transvaginal and transobturator autologous vaginal tape cystocele treatment: About an uncommon case

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ABSTRACT

Background: Pelvic organ prolapse (POP) significantly impairs women's quality of life. The literature reports that nearly one in five women will require surgery in their lifetime, and nearly 40.6% involve anterior wall repair, specifically cystocele. Several techniques and surgical approaches have been used for cystocele management. These were performed by transvaginal and/or transabdominal approach and involved the use of native tissue or prosthesis. Nevertheless, since the transvaginal mesh ban recommended by the FDA and learned societies, autologous tissue repair has become the cornerstone of all vaginal prolapse surgery.

Case presentation: We hereby present the case of a 71-year-old widow who had undergone three vaginal deliveries. The patient reported that she no longer had sexual intercourse. The preoperative functional signs observed included: stress urinary incontinence, urinary urgency, dysuria and disabling vaginal ball feeling. The management strategy chosen in consultation with the patient was a repair using autologous material via the vaginal route. The vaginal strips were passed through trans-obturator and retro pubic route allowed support of the bladder.

Conclusions: This technique using autologous material was easy, fast and inexpensive. It was developed on the basis of the TVT and TOT techniques and stood out for its tolerance and long-lasting functional effectiveness. It avoids all the complications due to polypropylene trans-vaginal prostheses that led to the banning of trans-vaginal mesh.

1. Background

Pelvic organ prolapse (POP) significantly impairs women's quality of life. The literature reports that nearly one in five women will require surgery in their lifetime, and nearly 40.6% involve anterior wall repair, specifically cystocele [1]. Several techniques and surgical approaches have been used for cystocele correction. These were performed by transvaginal and/or transabdominal approach and involved the use of native tissue or prosthesis [2,3].

Nevertheless, since the transvaginal mesh ban recommended by the Food and Drug Administration (FDA) and other learned societies, autologous tissue repair has become the cornerstone of all vaginal prolapse surgery [4]. Several surgical techniques have been proposed, consisting mainly of anterior colporrhaphy, vaginal patch plastron and para vaginal repair. Postoperative fibrosis provides sufficient support for quality anchorage. Through this case report, we have described our

surgical technique for the treatment of cystocele by autologous vaginal flaps passed through trans-obturator and retro-pubic approach.

2. Case presentation

We hereby present the case of a 71-year-old widow who had undergone three vaginal deliveries. The patient reported that she no longer had sexual intercourse. The preoperative functional signs observed included: stress urinary incontinence, urinary urgency, dysuria and a disabling vaginal ball feeling. The therapeutic strategy chosen in consultation with the patient was a repair using autologous material via the vaginal approach. The vaginal strips were passed through a trans-obturator and retro pubic route to provide bladder support. The operation was performed under spinal anesthesia in the gynecological position.

The first step was anterior colpotomy with dissection of the vaginal wall along the midline from the urethral meatus to the cervix. The

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Abbreviations

POP	Pelvic organ prolapse
FDA	Food and Drug Administration
TVT	Tension-free Vaginal Tape
TOT	TransObturator Tape
PFDI 20	Pelvic Floor Distress Inventory
PFQ 7	Pelvic Floor Impact Questionnaire
PISQ 12	Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire
HAS	French National Authority for Health
CNGOF	French National College of Obstetricians and Gynecologists

dissection continued with the opening of the paravaginal space to the tendon arch and fascia of the internal obturator muscle. The crucial time was then the shaping of the anterior vaginal strips, not forgetting the de-epidermization to prevent the subsequent formation of mucocoele. The second step of the procedure was the dissection of the posterior vaginal wall along the midline from the cervix to the lower end, which allowed the dissection and opening of the paravaginal space towards the levator ani muscles. This allowed us to discover the presence of an elythrocele. We completed the procedure with a raphe of the levator ani muscles using two stitches with Vicryl 0 (Fig. 1). We then proceeded to the shaping of the posterior vaginal strips with de-epidermization, similar to the anterior strips (Fig. 2).

Two small skin incisions on either side of the midline above the pubis were then made. The awl (or Shirodkar needle) was passed retro pubis (out-in) to the paravaginal space (Fig. 3). The free end of a suture was then threaded through the Shirodkar needle, which was removed through the skin incision. The vaginal tapes were thus drawn through the retropubic passage inspired by the TVT (tension-free vaginal tape). Two small skin incisions in the genitofemoral gutter were also made in the immediate vicinity of the obturator foramen. The awl (or Shirodkar needle) was passed as before through the first skin incision and guided through the entire thickness of the obturator membrane, the internal obturator muscle and its fascia to emerge in the paravaginal space. The



Fig. 1. Raphy of the levator ani using two vicryl 0 stitches.

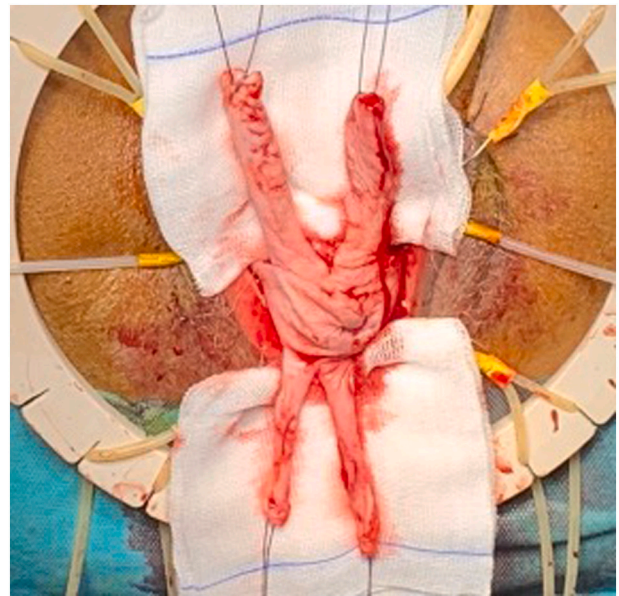


Fig. 2. Shaping of anterior and posterior vaginal strips.

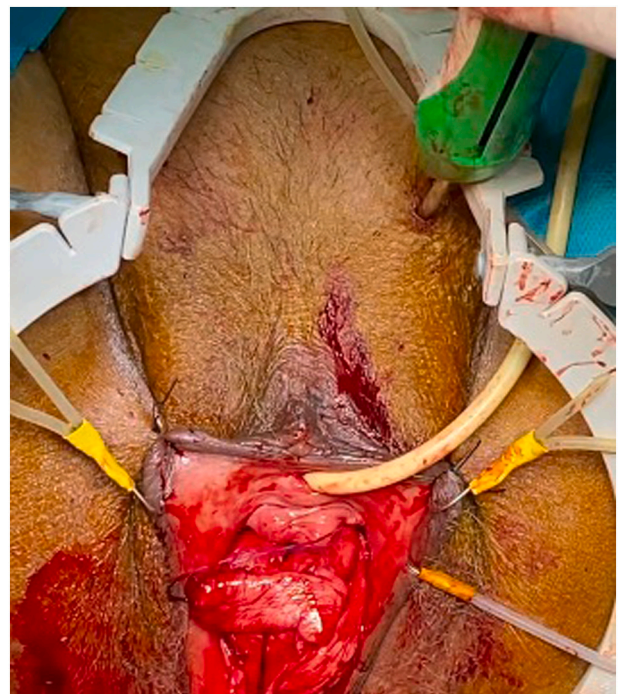


Fig. 3. Passage of the awl (or Shirodkar needle) passes retro pubically (out-in) to the paravaginal space: left side.

free end of a suture was then threaded through the Shirodkar needle which was withdrawn through the skin incision. The vaginal tape was pulled through the retropubic passage inspired by the TOT (trans-obturator tape). The colpotomy was closed with a No1 Vicryl overlay.

To replace the Velcro effect of the Vaginal mesh, the two ends of the threads of the anterior strips were passed through a median hole above the pubis and knotted to ensure an ideal suspension (Fig. 4). In addition, the two ends of the posterior bandage threads were also passed through a median opening under the vagina and knotted to ensure optimal support.

The operation ended with the closure of the skin openings. The final appearance was satisfactory (Fig. 5). Operating time was 63 min. Blood

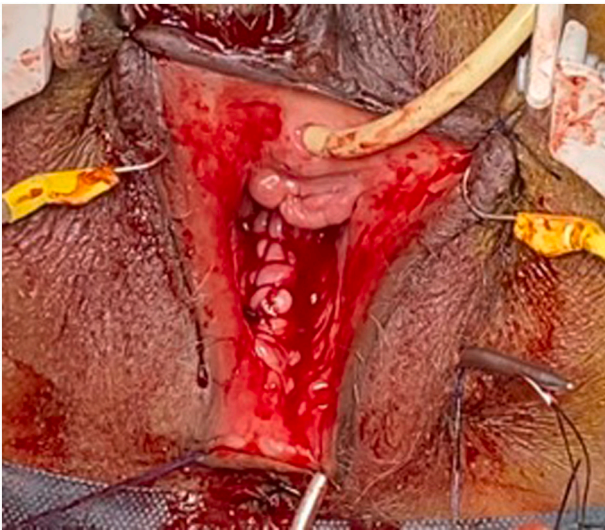


Fig. 4. Tip for replacing the Velcro effect of Vaginal mesh and ensuring optimal support: The two ends of the threads of the posterior strips are passed subcutaneously through a median hole under the vagina.



Fig. 5. The satisfactory final appearance.

loss was estimated at 70 cc. The patient was discharged home the day after the operation. Follow-up at 3 and 6 months was uneventful. The patient reported a resolution of her urinary symptoms with a substantial improvement in her quality of life. The technique's effectiveness was assessed by quality of life and sexuality questionnaires Pelvic Floor Distress Inventory (PFDI 20), Pelvic Floor Impact Questionnaire (PFIQ 7), and Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ 12) performed at 3 months postoperatively.

3. Discussion

In this era of evidence-based medicine, health professionals are required to rigorously evaluate the evidence supporting their practice and to strictly follow the constantly evolving recommendations of scientific societies. The indication for surgery is mainly based on functional discomfort. The aim of surgery is, on the one hand, to restore the resistance mechanisms that oppose the pressure forces in order to treat the support system deteriorated by obstetrical trauma, and, on the other hand, to restore the suspension system altered by aging [5].

Kelly et al. proposed an anterior colporrhaphy with tissue plication just below the bladder and urethra [6]. The entire assembly was then fixed in the periurethral plane and reattached to the midline. There are several variations of this procedure, including the procedure by Bologna et al. [6]. However, abdominal promontofixation appeared to have better results than anterior repair, given the subjective cure rates observed [5–6].

Sub-urethral sling procedures involved creating vaginal slings from artificial or autologous tissue under the urethra and attaching them to various structures in the abdominal wall or retro-pubic space. The literature is replete with possible tissue choices: autologous fascia (rectus or fascia lata), the vaginal wall, or other exogenous natural tissues (bovine, porcine, or cadaveric) [7]. The wide range of tissues for sling creation and surgical techniques complicates a review of the medical literature on this surgical procedure.

Needle suspension is another technique that was performed with sutures attached to the periurethral tissues or structures and then by suspending these from the anterior abdominal fascia. The three main types of suspensions are those of Pereyra et al., Stamey et al., and Raz et al., with many variations [8–11]. TVT procedure was then developed by Ulmsten et al. [12] as a minimally invasive suburethral sling procedure. In 2001, Delorme et al. [13] introduced the TOT procedure for the treatment of stress urinary incontinence with satisfactory results. Easy, with few complications, it was rapidly adopted by many medical centers [13].

More recently, learned societies such FDA [14], HAS [15] and CNGOF [16] have warned clinicians and patients about the serious complications associated with transvaginal mesh resulting in the vaginal mesh ban. Autologous tissue repair has naturally become the cornerstone of all vaginal prolapse surgery. However, success rates for native tissue repair are heterogeneous (34.5% to 89%), depending on study design and outcome definition [17]. Based on several techniques, our center has therefore developed the surgical technique that we have presented in this case report, which is based on the mechanical basis of cystocele repair by TVT and TOT. More randomized trials comparing the efficacy of the native vaginal tissue techniques would allow us to establish the indications in a more objective manner [17].

4. Conclusions

This technique using autologous material was easy, fast and inexpensive. It was developed on the basis of the TVT and TOT techniques and stood out for its tolerance and long-lasting functional effectiveness. It avoids all the complications due to polypropylene trans-vaginal prostheses that led to the banning of trans-vaginal mesh.

This work has been reported in line with the SCARE 2020 criteria [18].

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Ethical approval

Ethics approval has been obtained to proceed with the current study.

Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Guarantor of submission

The corresponding author is the guarantor of submission.

Availability of data and materials

Supporting material is available if further analysis is needed.

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Declaration of competing interest

The authors declare that they have no competing interests.

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