A Combined Approach: Laparoscopic Partial Bladder Prior Transurethral Resection for Bladder Endometriosis—Case Report and Surgical Video Presentation

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OBJECTIVE Bladder endometriosis is the presence of stroma and endometrial glands in the thickness of the detrusor muscle. The main symptoms it produces are dysuria and hematuria whose intensity is directly proportional to the size of the nodule. It is a difficult entity to diagnose for which physical examination is essential. Treatment can be medical, with hormonal therapies, or surgical by transurethral resection of the nodule and laparoscopic partial cystectomy.

METHODS To show a clinical case and review the literature about the technique used.

RESULTS A 29-year-old patient diagnosed with bladder endometriosis in which a combined approach was decided by laparoscopic partial cystectomy after transurethral resection: the patient came to our office for chronic pelvic pain, dysuria, dysmenorrhea, and a physical examination that showed a painful nodule on the anterior side of the vagina. A transvaginal ultrasound, magnetic resonance imaging, and cystoscopy confirm the diagnosis of bladder endometriosis. After a review of the literature on the management of this entity, the patient's clinic, and reproductive desires, the combined approach with excellent results was decided. Dysmenorrhea and dysuria disappeared, preserving the fertility of the patient who became pregnant 6 months after the intervention.

CONCLUSION The use of the combined approach allows to reduce the limitations of both techniques separately. UROLOGY 178: 187–189, 2023. © 2023 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Bladder endometriosis is the presence of stroma and endometrial glands in the thickness of the detrusor muscle.[1] It appears in 1% of all patients diagnosed with endometriosis and in 20%-50% of patients with deep endometriosis.[2] In addition, the bladder is the most frequent location in urinary tract involvement. Bladder endometriosis can form different nodules, although the most frequent is the appearance of a single nodule in the back of the trine or in the bladder dome, which can compromise the total thickness of the bladder wall. Patients suffering from this pathology usually present dysuria (21%-69%); hematuria (0%-31%) by the invasion of the mucous layer; Repeated pollakiuria and urinary tract infections, although the latter are less frequent.[2] There is a positive correlation between the severity of the symptoms and the diameter of the lesions.[3] The physical examination is essential in its diagnosis since bimanual examination allows to evidence a nodular induration in the anterior face of the vagina, or a very painful area in 35%-100% of patients, although the use of complementary tests such as transvaginal ultrasound, magnetic resonance imaging, or cystoscopy is essential to know the size and location of the lesions.

Treatment can be medical using combined hormonal therapies or surgical by transurethral resection, partial or total cystectomy via laparoscopic or a combined approach of both routes. The objective of the combined approach is to reduce the limitations of both techniques by resecting the endometriotic nodule as much as possible and, at the same time, preserving as much healthy bladder as possible in order to avoid future complications of the intervention.

METHOD

We present the clinical case of a patient diagnosed with bladder endometriosis in whom laparoscopic partial cystectomy was decided after transurethral resection, as presented in the attached video.

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DISCUSSION

A 29-year-old patient consulted for intermenstrual bleeding of 2 years of evolution and chronic pelvic pain. The patient is allergic to propylene glycol and her history includes asthma since childhood and atopic dermatitis treated with corticosteroids and immunoglobulins. She is nuliparous, with unfulfilled reproductive desires. Among his family history, his maternal grandmother was diagnosed with endometriosis and required radical surgery.

On a visual analog pain scale of 1-10, the patient scored dysmenorrhea and dysuria with the highest score, and chronic pelvic pain with 7. He did not refer to dyspareunia or disquecia. During the physical examination, the uterus was evidenced in nonpainful anteversion, with exploration of the uterosacral ligament and normal rectovaginal septum and intense pain on examination of the anterior aspect of the vagina.

The following complementary tests were performed:

- Cytology: reactive cellular changes associated with inflammation.
- Cervical biopsy: mature and immature squamous metaplasia without dysplasia with negative p16 immunostaining.
- Laboratory tests: anti-Müllerian hormone 4.49 ng/mL. Marcadores: Ca 19.96 UI/mL. Ca125 119 (**) UI/mL, CEA 1.0 ng/mL, HE4 42 pmol/L.
- Ultrasound: urinary bladder with a thickened wall on the back and roof. Thickened mucosa with a polycyclic outline. Increased vascularization of the wall. On the back side, there is an 18 × 10 mm nodule that seems endometriotic and does not capture color with Doppler. Uterus and ovaries of normal morphology (Fig. 1).
- Cystoscopy: brownish-violet mamelonate lesions in retrotrine and fundus suggesting endometriosis. Transurethral resection of the same with handle.

After the diagnosis of bladder endometriosis and the failure of medical treatment, conservative surgical treatment was decided taking into account the intense symptomatology of the patient, her age, and her reproductive desire.

First, transurethral resection was performed with the location of the endometriotic nodule. The normopositioned ureteral meatuses in the bladder fundus were evidenced and a small retracted and ammoniated area surrounded by scarring mucosa, resulting from the previous cystoscopy, was observed. It was performed, transurethral with collings loop, the carving of the lesion with a margin of 1 cm of healthy mucosa, deepening through the muscular plane.

In a second abdominal time, the laparoscopic route was used. Pneumoperitoneum was performed using an umbilical Veress needle. 4 ports were used: 1 umbilical of 11 mm, another of 11 mm suprapubic, and 2 of 5 mm in the left and right iliac fossa. The peritoneal cavity was reviewed in its entirety, ruling out the presence of adhesions in the upper hemiabdomen. The adhesions of omentum were released in a solid nodule located in the uterine body that contacted the bladder. Subsequently, the bladder nodule was resected along with the portion of it that infiltrated including healthy margins already predetermined. The bladder wall defect was sutured in 2 planes with polygycolic acid suture 3/0, checking the correct tightness. Before finishing, the omentum was interposed between the cystorrhaphy and the uterine body and the excision of three peritoneal lesions < 1 cm at the level of the left sacral uterus ligament was performed. The postoperative period was favorable.

Chapron et al[4] Soriano et al[5] and Fedele et al[6] have shown together with other authors that total nodule resection not only produces symptomatic improvement but also decreases disease recurrences with excellent long-term results.

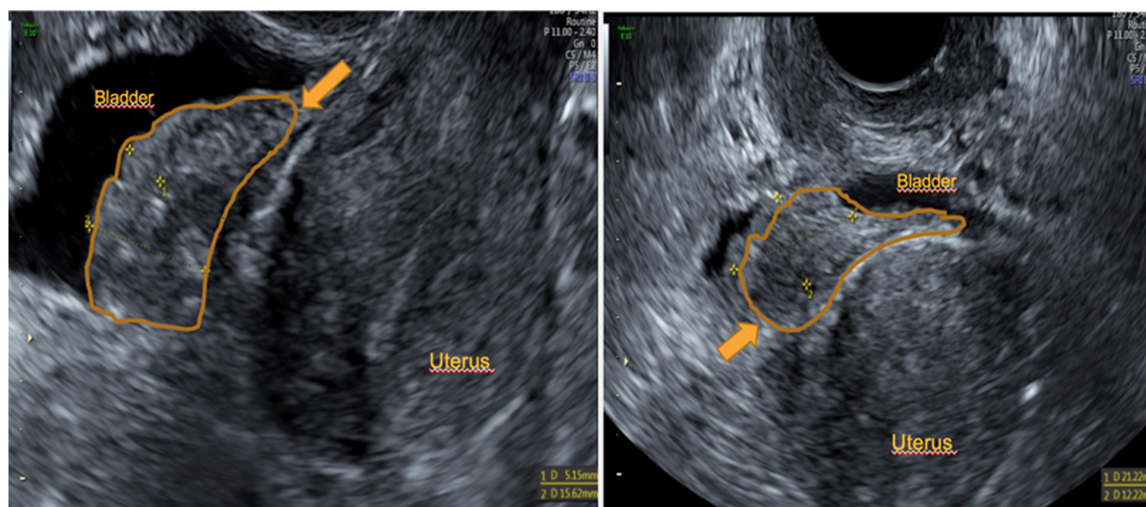


Figure 1. Bladder node. (Color version available online.)

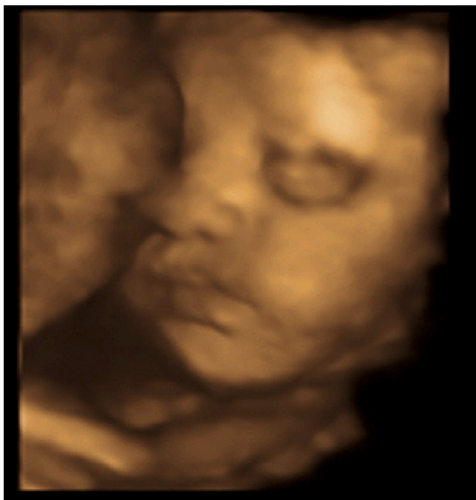


Figure 2. Picture of a 20 weeks pregnancy. (Color version available online.)

Isolated transurethral resection of the nodule has been proposed as a treatment for bladder endometriosis, although the growth of the nodule begins in the outer wall of the bladder and is directed toward the mucosa. This prevents complete resection. Umberto Leone et al[2] conducted a systematic review in 2016 in which they perceive a higher rate of recurrences and complications of the intervention in the short term performing a transurethral resection, so they advise against its isolated use. Similarly, the isolated laparoscopic approach of bladder nodules can lead to inadvertent resection of the healthy bladder wall.[7] The decrease in bladder volume increases the appearance of dysfunctional symptoms such as dysuria, pollakiuria, or denervation.

The use of the combined approach allows to reduce the limitations of both techniques separately. Litta et al[8]; Endo et al[9] have published 2 series of cases with a total of 24, in which they show the favorable evolution of all of them with the absence of complications or recurrence of the disease.

CONCLUSION

Specifically, the combined approach in our patient has allowed the remission of the disease with symptomatic disappearance preserving her fertility. During the post-recovery follow-up, we again performed a pain assessment on the visual analog scale: this time chronic pelvic pain scored 4 points and dysmenorrhea and dysuria 0 points. At 6 months after the intervention, the patient became pregnant (Fig. 2).

CONSENT

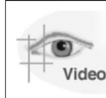
Written informed consent was obtained from the patient for the publication of this video article and any accompanying images.

CRediT authorship contribution statement

Juan Ramón Pérez Vidal: Manuscript writing and video editing. **Maria Pilar Marín Sánchez**: Video editing and manuscript writing. **Cristóbal Moreno Alarcón**: Manuscript editing. **Alberto Rafael Guijarro Campillo**: Manuscript translating. **Anibal Nieto Diaz**: Manuscript editing.

Declaration of Competing Interest

All authors declare no conflict of interest.



The video related to this article can be found online at: doi:10.1016/j.urology.2023.05.011.

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