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Case Report

Bladder endometriosis masquerading as recurrent urinary tract infection: successful fertility-preserving laparoscopic management

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ABSTRACT

Urinary tract endometriosis is an uncommon manifestation of deep infiltrating endometriosis, accounting for approximately 1% of all endometriosis cases, with the bladder being the most frequently involved urinary organ. Because its symptoms often mimic recurrent urinary tract infection or bladder pain syndrome, diagnosis is frequently delayed. A 38-year-old woman presented with recurrent dysuria, severe dysmenorrhea and urinary frequency for one year despite repeated medical treatment. Pelvic MRI demonstrated deep infiltrating endometriosis involving the posterior bladder wall with associated bilateral ovarian endometriomas, adenomyosis and rectosigmoid serosal involvement. Cystoscopy revealed a bluish submucosal lesion over the posterior bladder wall with sparing of the trigone. The patient underwent laparoscopic bilateral ovarian cystectomy, excision of deep infiltrating endometriosis, bilateral ureterolysis, adenomyomectomy and laparoscopic partial cystectomy with two-layer bladder repair. Histopathology confirmed bladder endometriosis. The postoperative course was uneventful, and urinary symptoms resolved following catheter removal and hormonal suppression with dienogest. Bladder endometriosis should be considered in women with persistent lower urinary tract symptoms refractory to conventional treatment, particularly when associated with pelvic pain or dysmenorrhea. Early MRI evaluation and multidisciplinary laparoscopic surgery allow complete excision while preserving fertility.

Keywords: Bladder endometriosis, Deep infiltrating endometriosis, Partial cystectomy, Laparoscopy, Chronic urinary tract infection, Fertility preservation

INTRODUCTION

Urinary tract endometriosis represents a rare type accounting for 1% out of which bladder (85%) involvement is most common.¹

As per the International working group of American Association of Gynecological Laparoscopists (AAGL), ESGE, ESHRE and WES, bladder endometriosis is defined as the presence of endometriosis infiltrating the detrusor muscle and / or the bladder epithelium.² Clinically experience symptoms such as cyclical pelvic pain and hematuria, dysuria, urinary urgency and frequency.³

This case highlights rare case of bladder endometriosis masquerading as recurrent chronic urinary tract infection.

CASE REPORT

A 38year old female, Abortion 1 (Hysterotomy) 6 months back, presented with 1-year intermittent history of dysmenorrhea, dysuria and episodes of increased urinary frequency not relieved on medication with no hematuria reported.

Ultrasound imaging showed a mass over posterior wall of bladder.

Pelvic MRI depicted grade 3 DIE involving bladder, rectosigmoid colon (serosal). Ill-defined endometriotic deposit 2.7×1.6 cm adherent to postero superior urinary bladder wall noted (Figure 1 and 2). Left ovarian endometrioma measuring 4.8×4.9×6.2 cm (kissing ovary

complex) with dense adhesions. Anterior uterine adenomyoma measuring 57×29 mm and posterior wall thickening (54 mm).

Cystoscopy findings included edematous bluish lesion involving mucosa 2.5×1.5 cm over posterior wall of bladder. Bilateral ureteric opening visualized clearly with the trigone area spared (Figure 3 and 4).

The intra operative findings included Uterus bulky, 10 weeks size with adenomyoma approximately anterior 4×5 cm and posterior 3×4 cm.

Multiple adhesions, omental adhesions noted. Bilateral endometrioma-left 4×3 cm and right 3×2 cm. Bilateral kissing ovaries along with bowel adhesions to posterior surface of uterus. Bilateral uterosacral ligaments were thickened and adherent.

Patient underwent laparoscopic bilateral ovarian endometriotic cystectomy with excision of endometriotic nodule over rectocervix and uterosacral ligament with distal sigmoid dissection with pelvic peritonectomy with Bilateral ureteric dissection with partial bladder cystectomy with bilateral hypogastric nerve dissection with adenomyomectomy.

Incision taken over bladder by harmonic till endometriotic deposit seen over posterior surface 3×2 cm (Figure 5-8) There is no involvement of trigone area and bilateral ureteric orifice were visualized (Figure 10) Resection of tissue along with normal margin of bladder tissue done and sutured in two layers with V loc 2-0 (Figure 9) post surgery, bladder patency checked with the methylene blue dye.

HPR confirmed bladder endometriosis. Catheter kept in situ for 21 days. Bladder muscle relaxant given for a month and Dienogest 2 mg given for 3 months.



Figure 1: Bladder endometriotic nodule over posterior bladder wall.

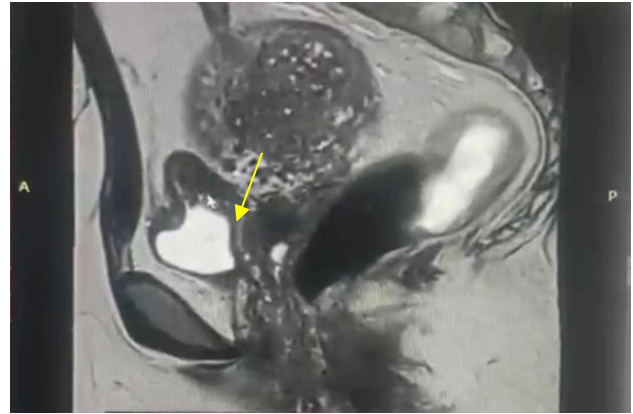


Figure 2: Bladder endometriosis.

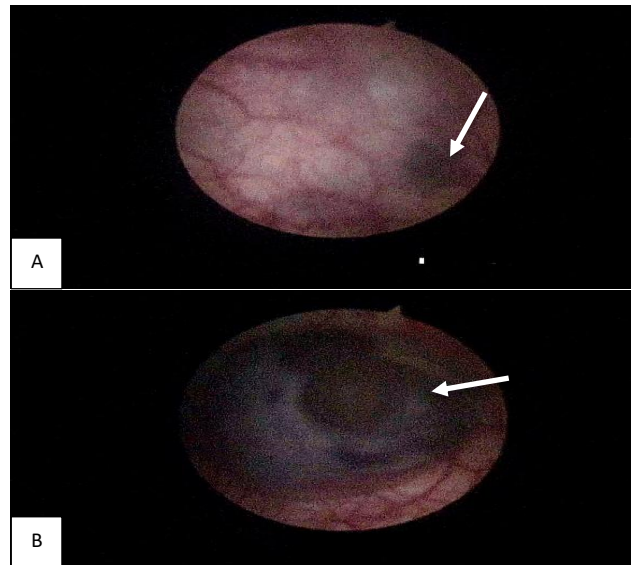


Figure 3 (A and B): Cystoscopic image of bladder endometriotic nodule on posterior wall.

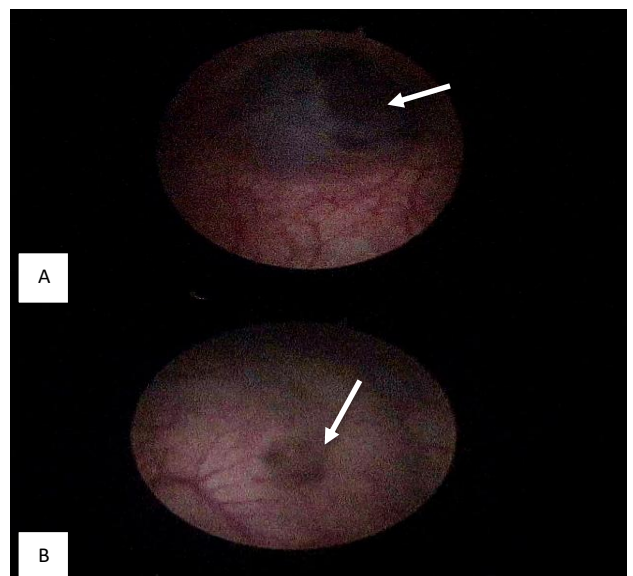


Figure 4 (A and B): Cystoscopic images of bladder endometriotic nodule.

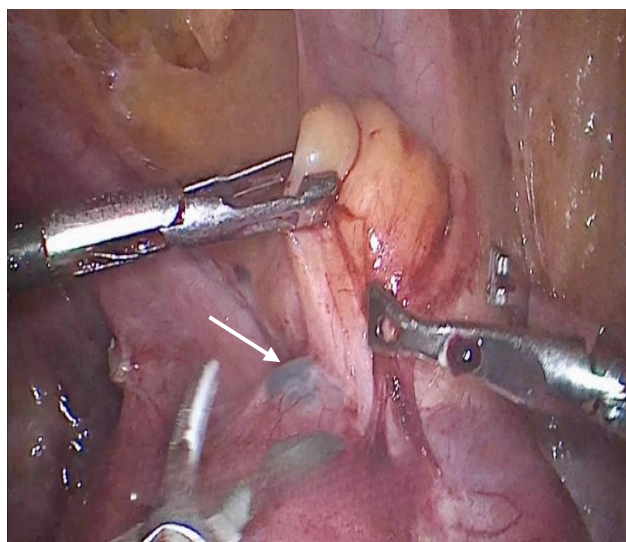


Figure 5: Endoscopic view of bladder endometriotic lesion.

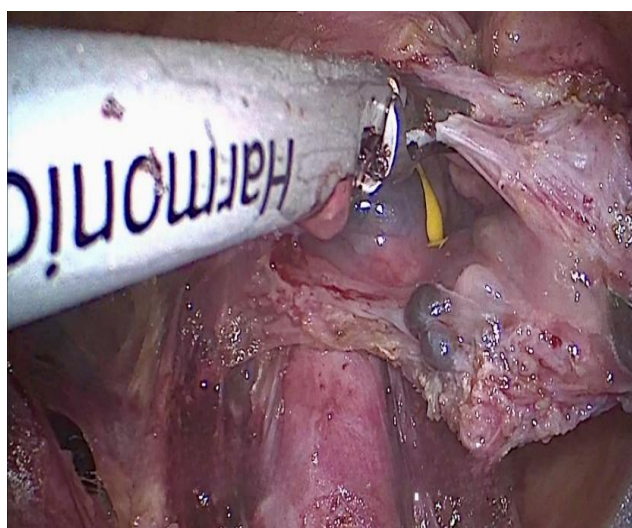


Figure 6: Endoscopic view of bladder endometriotic nodules.



Figure 7: Endoscopic view of bladder endometriotic nodule.

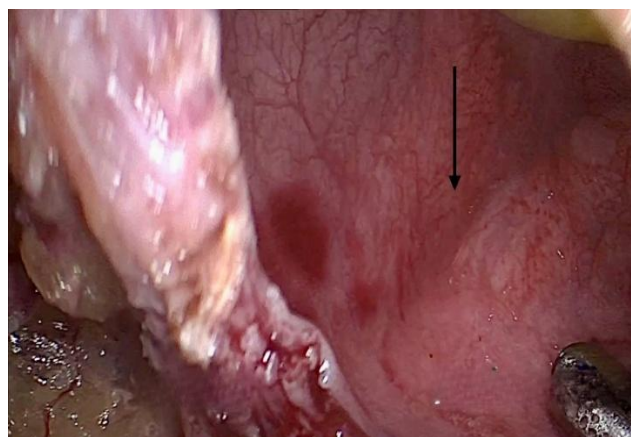


Figure 8: Left ureteric orifice visualized endoscopically. Trigone area shows no involvement.



Figure 9: Bladder wall sutured in two layers.

DISCUSSION

Endometriosis defined as presence of functional glands and stroma outside uterine cavity, affecting 10-12% of reproductive age group.^{1,3}

Bladder endometriosis categorized as Primary (spontaneous) and secondary (Iatrogenic). Theories explaining primary as implantation of refluxed endometrial cells in anterior cul de sac under influence of gravity and secondary as discontinuation of peritoneum of UV fold followed by iatrogenic dissemination of decidual fragment.²

Bladder endometriosis present with varied symptoms such as suprapubic pain with polyuria (41%), dysuria (21%), hematuria (up to 19%), and recurrent urinary tract infections.⁴ 60% experience symptoms without any relationship to menstruation.⁵

USG (sensitivity 83%, Specificity 89%) is primary modality, though MRI provide accuracy (98%) in deep infiltrative lesion. Laparoscopy is the gold standard.

Cystoscopy enable precise identification of lesion margin, distance from trigone and ureteric orifice; facilitating intra operative decision of DJ stenting during the surgery.⁶

The differential diagnosis includes bladder mass, interstitial cystitis, bladder pain syndrome.⁷

Hormonal treatment protocol for bladder endometriosis are akin to general endometriosis but limited study. Laparoscopic partial bladder resection and shaving seem to be appropriate methods for improving urinary symptoms, with a low rate of intra- and postoperative complications even in patients with large endometriosis nodules making it appropriate as a fertility sparing method.⁸

CONCLUSION

Bladder endometriosis may mimic chronic urinary infection, leading to delayed diagnosis which is highlighted in our case. Thus, high clinical suspicion is essential in persistent and treatment resistant cases. Minimally invasive surgery provides definitive management with reduced morbidity, quicker recovery and optimal preservation of fertility.

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Ethical approval: Not required

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