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A Unique Occurrence of Vesical Endometriosis 16 Years After Cesarean Section: A Case Report

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Abstract

Background: *The rare disorder urinary bladder endometriosis develops when endometrial tissue, which lines the uterus, grows in the bladder wall. This aberrant endometrial tissue causes hematuria, dysuria, and pelvic discomfort. Though, these symptoms are not exclusive to this illness, they make diagnosis difficult. Ultrasound, Magnetic Resonance Imaging, and cystoscopy play a crucial role in confirming the diagnosis. Treatment options range from medical management with hormonal therapies to surgical interventions like transurethral resection or partial cystectomy depending upon personal needs and endometriosis severity.*

Case Presentation: *We are presenting a case report highlighting this uncommon yet clinically significant presentation of urinary bladder endometriosis in a 38-year-old female, who had been experiencing cyclical dysuria for about one year. Her medical history included two previous Caesarean deliveries with last being 16 years ago. MRI revealed variable intensity lesion with internal cystic areas along left posterolateral urinary bladder wall which was inseparable from lower segment caesarean section scar, indicative of urinary bladder endometriosis. Patient received medical treatment leading to resolution of her symptoms.*

Conclusion: *Urinary bladder endometriosis following caesarean section is an uncommon but clinically significant condition that demands timely recognition and appropriate management. A thorough diagnostic workup, including imaging studies and cystoscopy, is crucial for accurate diagnosis. Tailored treatment plans, ranging from hormonal therapies to surgical interventions, should be considered based on disease extent, fertility desires, and overall patient health.*

Keywords: Urinary bladder endometriosis, Caesarean section, Dysuria, Ultrasound, Magnetic Resonance Imaging, Case Report

Background

Urinary bladder endometriosis (UBE) after a cesarean section is seen as one of the serious medical problems, caused by improper growth of endometrial tissue in urinary bladder wall [1]. Although UBE can arise independently, the occurrence after a cesarean section raises questions regarding the possible effects of surgical interventions on endometriosis developing in new places. This association not only enriches the clinical panorama of UBE but also triggers a further analysis regarding how surgical procedures contribute to endometriosis' pathogenesis.

1 to 4 percent of the women diagnosed with endometriosis are found to have UBE thereby indicating that this is a relatively infrequent presentation associated with such a condition [2]. Common signs include urinary urgency and frequency, dysuria and sometimes hematuria. These symptoms are usually worse during menstrual periods because of the hormonal sensitivity of ectopic endometrial tissue [3]. Chronic pelvic pain caused by this condition can greatly affect one's quality of life. As these symptoms can easily overlap with more common urinary conditions, very often they lead to misdiagnosis and subsequently, delayed treatment, thus emphasizing the need for a higher level of clinical suspicion in situations concerning such cases [4].

UBE after C-section is an intricate phenomenon where several theories have been proposed. Although conclusive information is lacking, preliminary studies show a greater prevalence of UBE after C-sections. More comprehensive research needed to verify these findings and define the precise risk ratio [2].

UBE post-C-section remains an area in need of further exploration, underlining the necessity for more focused research

efforts. These efforts should aim to elucidate the specific relationship between C-sections and UBE development, improve diagnostic accuracy, especially in post-surgical scenarios, and refine treatment modalities considering the unique challenges posed by C-section scar tissue. Enhancing awareness among medical professionals and the public about this potential postoperative complication is equally crucial. By deepening our understanding of UBE post-C-section, we can better equip women with the necessary information and resources for prompt diagnosis, effective management, and ultimately, an improved quality of life.

Case Presentation

A 38-year-old female patient presented to the outpatient department with a chief complaint of cyclical dysuria, burning micturition and pelvic discomfort lasting for approximately 1 year. She reported that her symptoms worsened during menstruation. This was not associated with any abdominal pain or hematuria. Her past medical history included two previous cesarean deliveries with the last being approximately 16 years prior. Family history was unremarkable. There was no history of trauma. She tried over-the-counter drugs but had no comfort. Clinical findings revealed cyclical dysuria. On examination, she was a female with normal body mass index (BMI) of 21 kg/m2. Her abdomen was soft, non-tender and there were no obvious palpable masses. Her cesarean scar was unremarkable. Speculum examination revealed a normal cervix and vagina. There was no evidence of urinary incontinence or urogenital prolapse. Her laboratory investigations, especially urine analysis were within normal range.

Abdominal ultrasound performed followed by transvaginal ultrasound (TVS) which revealed heterogeneous echogenicity soft tissue thickening along the posterior urinary bladder wall with few small cystic areas. It was inseparable from the anterior uterine wall (Figure 1). Doppler evaluation demonstrated moderate flow within the lesion. Findings raise the possibility of urinary bladder wall endometriosis. Few (atleast four) small fibroids were also seen, with the largest measuring 13 x 10 mm in the anterior uterine wall. Both ovaries appeared normal, and there was no evidence of free fluid in the cul-de-sac.

Patient underwent MRI pelvis that showed the presence of an 83 x 40 x 26 mm variable signal intensity mildly enhancing lesion involving the left postero-lateral urinary bladder wall, inseparable from the cesarean section scar. The lesion was having with few small T2W hyperintense internal cystic areas (Figure 2). Findings were suggestive of urinary bladder wall endometriosis. Few (atleast four) T2W hypointense mural lesions were also identified within the uterine wall, including two submucosal lesions, with the largest measuring 14 x 10 mm in the anterior uterine wall, suggestive of uterine leiomyomas. Cervix and vagina appeared unremarkable. No adnexal mass or lymphadenopathy was seen. Patient received hormonal therapy and responded well with complete resolution of her symptoms.

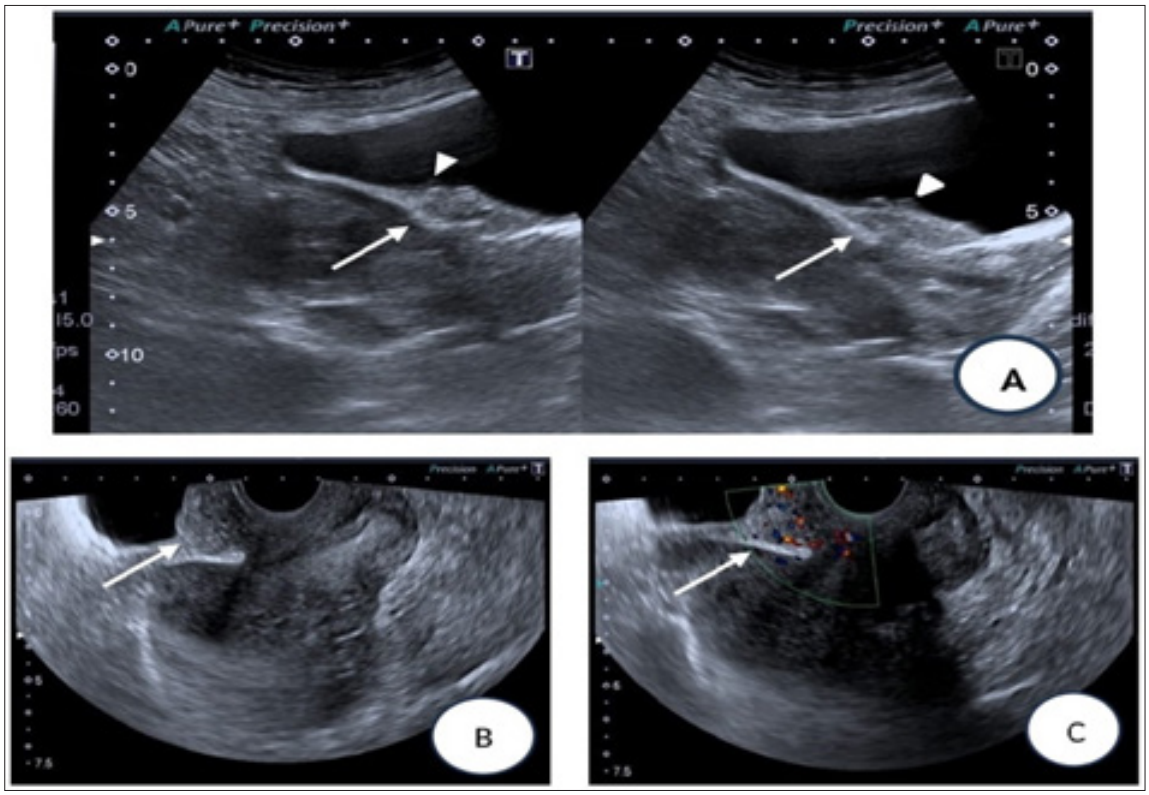

Figure 1: Transabdominal (A) and Transvaginal (B) Ultrasound images showing heterogeneous echogenicity soft tissue thickening along the posterior urinary bladder wall (white arrow) with few small cystic areas (white arrow heads). It was inseparable from the anterior uterine wall. Doppler evaluation (C) revealed moderate flow within the lesion.

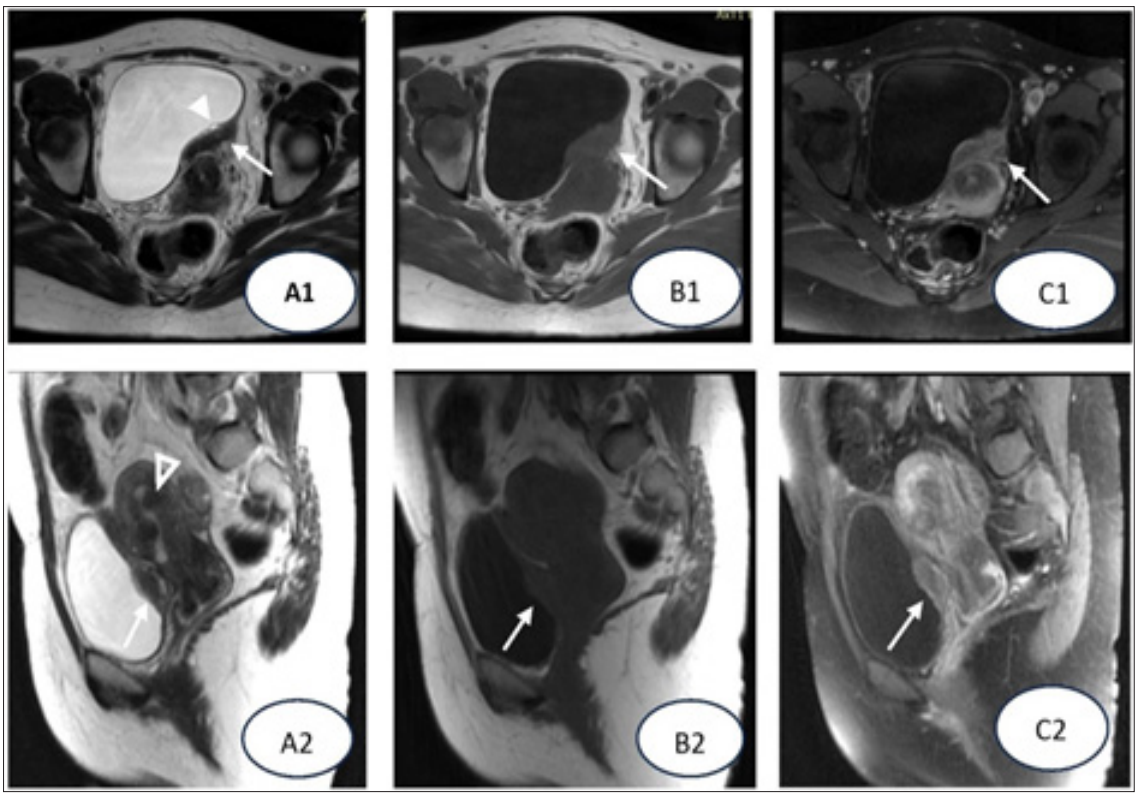

Figure 2: MRI Pelvis: Axial and Sagittal T2W (AI, A2), Axial and Sagittal T1W (BI, B2), and Axial and Sagittal T1W post contrast (C1, C2) images of pelvic MRI showed the presence of a variable signal intensity mildly enhancing lesion involving the left postero-lateral urinary bladder wall (white arrow), inseparable from the cesarean section scar. The lesion was having with few small T2W hyperintense internal cystic areas (white arrow head). Findings were suggestive of urinary bladder wall endometriosis. Submucosal small uterine leiomyomas are also evident (white open arrow head).

Discussion

Though a very rare condition, urinary bladder endometriosis post-cesarean section is clinically significant. This condition starts when tissues of the endometrium, which should normally line the uterus, grow abnormally in or even on the urinary bladder [5]. This is especially the case in patients who have undergone a cesarean section, implying that there may be an association between surgical procedures and the onset of bladder endometriosis. Endometriosis in the bladder adds several difficult symptoms and complications that separate it from typical manifestation cases [1]. This is a condition that needs proper understanding and recognition to ensure timely and effective patient management and care.

There is no direct knowledge associated with the pathophysiological mechanisms of urinary bladder endometriosis post-cesarean section yet various theories are proposed in the medical circles [6]. The direct transplant theory suggests that cells from the endometrium are inadvertently transferred to the bladder during cesarean delivery, perhaps by direct contact or surgical instruments. This theory outlines the possible dangers of surgical procedures. Or, the metaplasia hypothesis proposes that bladder cells become transformed into endometrial-like ones under the influence of hormonal changes or immune responses [3]. Another assumption could be higher pelvic inflammation after the C-section and this increased possibility might create an environment that would support abnormal growth of endometrial tissue [2]. One hypothesis points to the accidental incorporation of endometrial cells into the bladder wall during a C-section, eased by surgical instruments or suture materials [7].

Urinary bladder endometriosis post-cesarean section is often symptomatically similar to urinary tract infections but is difficult to accurately diagnose [8]. Diagnosis requires detailed clinical assessment, imaging studies, and direct observation methods. Although ultrasound is used to determine the initial diagnosis of endometrial tissue proliferation, MRI has more profound insights into how much endometrial tissues are growing. The most reliable form of diagnosis is done via cystoscopy since it allows observing directly inside the bladder and make biopsy for histopathological confirmation [3].

Ultrasound (transabdominal/transvaginal) is the preferred initial method for assessing potential bladder endometriosisis as it is readily available. It can identify localized soft tissue thickening of the urinary bladder wall, which can indicate potential diagnoses of bladder endometriosis. When diagnosing urinary bladder endometriosis, it is important to consider differentials including subserosal anterior leiomyoma, urachus remnants, bladder carcinoma, and tumors originating from the bladder's muscular layer for example; angiomas and leiomyomas [9,10]. Endometriotic nodules can be visualized as irregular hypoechoic soft tissue lesions with a circumscribed appearance on ultrasound. These lesions may exhibit low-level echoes or contain small cystic areas [11]. Ultrasound in our

patient also showed heterogeneous echogenicity soft tissue thickening along the posterolateral urinary bladder wall having small cystic areas.

The typical MR imaging features include T2W hypointense lesions with focal or diffuse wall thickening of the bladder. These lesions may be limited to the serosa or replace the normal signal intensity of the muscular layer and in some cases, these may extend into the lumen of the urinary bladder. Multiple T2W high signal intensity areas indicating cystic spaces and areas of high signal intensity on T1W fat-saturated imaging indicating haemorrhagic foci are also observed. Recent investigations have indicated the importance of utilizing diffusion-weighted imaging (DWI) to precisely locate endometriotic implants [12]. MRI is having high diagnostic accuracy (98%) in the diagnosis of urinary bladder endometriosis [5].

Treatment of urinary bladder endometriosis is a personalized regimen based on the severity of symptoms and fertility requirements [13]. More commonly used are hormonal therapies, such as oral contraceptives or GnRH agonists aimed at diminishing the estrogen levels and consequently reducing the size of endometrial implants. Our patient responded well to hormonal treatment. When hormonal treatment is not effective, or in the case of severe symptoms, surgical interventions are also discussed. These surgical options range from less invasive methods such as transurethral resection to more aggressive interventions like partial cystectomy [5]. The treatment plan should balance symptom control and save bladder function and fertility. Comprehensive patient care also encompasses pain relief and psychological support to deal with the broader aspect of the impact of this condition on their well-being.

Conclusion

Urinary bladder endometriosis, although rare, holds clinical significance, particularly in women experiencing cyclical dysuria post-cesarean section. Diagnostic accuracy and effective treatment options are well-established, with MRI being a valuable imaging modality. The quality of life of patients is enhanced by prompt diagnosis and treatment. This case study emphasizes the need for greater research into the origins and therapies of endometriosis of the urinary bladder. Comprehensive care for this rare endometriosis requires interdisciplinary collaboration.

List of Abbreviations

UBE : Urinary bladder endometriosis
BMI : Body mass index
MRI : Magnetic resonance imaging
DWI : Diffusion weighted imaging

Conflict ofIinterest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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Consent for Publication

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

Ethical Approval

Ethical approval for the publication of this case report was obtained from the institutional review board.

Summary of the Case

1. Patients (gender, age): Females (38 years old)
2. Final diagnosis: Urinary bladder endometriosis
3. Symptoms: cyclical dysuria for 1 year.
4. Medications
5. Clinical procedure: Ultrasound (Transabdominal and Transvaginal) and MRI of pelvis
6. Specialty: Diagnostic radiology

References

1. Kolodziej A, Krajewski W, Dolowy L, Hirnle L. Urinary tract endometriosis. *Urology Journal. 2015;12*(4):2213-7. PMID: 26341760.
2. Vercellini G, Somigliana E, Viganò P, Fedele L, Marci R, Romanini ME, et al. Epidemiology of Endometriosis and Endometriosis-Associated Pain. UpToDate. 2024 Jan 11. Accessed 2024 Jan 11. https://www.uptodate.com/contents/endometriosis-treatment-of-pelvic-pain
3. Leonardi M, Espada M, Kho RM, Magrina JF, Millischer AE, Savelli L, Condous G. Endometriosis and the urinary tract: from diagnosis to surgical treatment. *Diagnostics. 2020 Sep 30;10*(10):771. DOI: https://doi.org/10.3390%2Fdiagnostics10100771.
4. Abdul M, Zubairu U, Madugu N, Bawa U. Post Cesarean Subcutaneous Endometriosis: A Report of Two Cases. *Trop J Obstet Gynaecol. 2021;38*(3):272-275.
5. Gustilo-Ashby AM, Paraiso MF. Treatment of urinary tract endometriosis. *Journal of Minimally Invasive Gynecology. 2006;13*(6):559-65. DOI: http://dx.doi.org/10.1016/j.jmig.2006.07.012.
6. Schneider A, Touloupidis S, Papatsoris AG, Triantafyllidis A, Kollias A, Schweppe KW. Endometriosis of the urinary tract in women of reproductive age. *International journal of urology. 2006;13*(7):902-4. DOI: https://doi.org/10.1111/j.1442-2042.2006.01437.x.
7. Pérez MP, Bazán AA, Dorrego JM, Hernández A, de Francisco MG, Hernández MM, de Santiago J, de la Peña Barthel J. Urinary tract endometriosis: clinical, diagnostic, and therapeutic aspects. *Urology. 2009;73*(1):47-51. DOI: https://doi.org/10.1016/j.urology.2008.08.470.
8. Bladder endometriosis: Symptoms, diagnosis, and treatment. Medical News Today. 2024 Jan 11. Accessed 2024 Jan 11. https://www.verywellhealth.com/bladder-problems-in-endometriosis-4691852.
9. Beaty SD, Silva AC, De Petris G. Bladder Endometriosis: Ultrasound and MRI Findings. Radiology Case Reports. 2006;1(3):92-5. DOI: https://doi.org/10.2484%2Frcr.v1i3.16.

10. Foti PV, Farina R, Palmucci S, Vizzini IAA, Libertini N, Coronella M, et al. Endometriosis: clinical features, MR imaging findings and pathologic correlation. *Insights Imaging [Internet]. 2018;9*(2):149–72.
DOI: http://dx.doi.org/10.1007/s13244-017-0591-0.
11. Hakeem A, Anwar SS, Anwar SS, Fatima F, Ahmed A. Bladder Endometriosis Masquerading as Bladder Tumor: The Role of Magnetic Resonance Imaging in Diagnosis. *Cureus*. 2021 Jul 3.
DOI: https://doi.org/10.7759%2Fcureus.16133.
12. Sulthana P. Teaching case [Internet]. Eurorad - Brought to you by the ESR. [cited 2024 Jan 22]. Available from: https://www.eurorad.org/case/13018/teaching-case.
13. Al Shenawi H, Al Shenawi N, Al Mousa NA, Al Abbas LA, Al Zayer NM, Alqhtani MM, Naguib Y. A Typical Presentation of Cesarean Section Scar Endometriosis: A Case Report. *Cureus. 2023;15*(12): e49884.
DOI: https://doi.org/10.7759%2Fcureus.49884