Case Report

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Postcesarean section abdominal wall endometriosis: a rare case report

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Introduction and importance: Abdominal wall endometriosis (AWE) is a rare but significant complication following cesarean sections. It manifests with recurring right lower quadrant pain, particularly during menstruation, and palpable masses at the cesarean scar site. Recognizing these symptoms is critical for timely diagnosis and effective management. This report discusses the clinical manifestations, diagnostic approach, surgical intervention, and postoperative outcomes of AWE in a specific patient.

Case presentation: A 28-year-old female presented with recurrent right lower quadrant pain, exacerbated during menstruation, and a palpable mass at her previous cesarean scar. Imaging revealed a well-defined 3.6 × 3 cm mass infiltrating through all layers of the abdominal wall.

Clinical discussion: This case highlights the challenges of diagnosing AWE, often presenting with vague symptoms like cyclic pain and palpable masses. The primary diagnostic tool was a CT scan, with histopathological examination confirming the diagnosis. Surgical excision was performed, resulting in significant symptom relief and a low recurrence rate.

Conclusion: This case underscores the importance of vigilance for AWE symptoms in patients with prior cesarean sections. Early recognition and surgical intervention are paramount for effective management and symptom alleviation

Keyword: abdominal wall endometriosis, case report, cesarean section

Introduction

Endometriosis represents a persistent medical condition characterized by the ectopic growth of endometrial tissue, which typically lines the uterine cavity beyond the confines of the uterus[1]. It occurs in 5–10% of all women. Extra-pelvic endometriosis is rare, accounting for <12% of reported cases[2]. The various sites for extra-pelvic endometriosis are the bladder, kidney, bowel, omentum, lymph nodes, lungs, pleura, extremities, umbilicus, hernia sacs, and abdominal wall[3].

A rare spread of endometriosis is abdominal wall endometrioma. Abdominal wall endometriosis (AWE) is defined as endometrial tissue superficial to the peritoneum and is associated with a history of surgical procedures such as cesarean delivery, hysterotomy, hysterectomy, episiotomy, ectopic pregnancies, and laparoscopy, among others[4]. AWE that follows a previous cesarean section has an incidence of 0.03–0.4%[4]. This type of endometriosis primarily affects the skin and tissue just beneath the skin around the area of a previous cesarean section. It is uncommon for the condition to spread into muscle tissue. Wide surgical excision is still the treatment of choice in the literature[5].

The economic impact of AWE and endometriosis, in general, is considerable. Endometriosis is associated with significant healthcare costs due to the need for diagnostic procedures, medical treatments, and surgical interventions. The condition also imposes indirect costs, including lost productivity and absenteeism, which can have a substantial economic burden on individuals and healthcare systems worldwide. For instance, in the United States, the annual cost of endometriosis-related healthcare and productivity losses is estimated to exceed $22 billion[6]. Considering the rising incidence of cesarean sections globally, the economic impact of AWE is likely to increase,

HIGHLIGHTS

- Abdominal wall endometriosis (AWE) postcesarean is rare, presenting with cyclic pain and palpable masses at the scar site.
- Recurring lower quadrant pain, especially during menstruation, requires differentiation from other abdominal issues.
- Imaging techniques identified AWE, confirmed by histopathological examination.
- Complete excision of AWE provided significant symptom relief and low recurrence rates.
- Emphasizes precise surgical techniques for effective AWE management following cesarean sections.

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underscoring the need for efficient diagnostic and management strategies to mitigate these costs.

This case report aims to examine the clinical features of AWE after a cesarean section, which was successfully treated with surgery, emphasizing the importance of surgical intervention for this condition.

This case report has been reported in line with the Surgical CAse Report (SCARE) Criteria[7].

Case presentation

A 28-year-old female with a history of two cesarean sections, the most recent being in 2020, presented to our outpatient clinic with recurring right lower quadrant pain, particularly during menstruation, over the past year. She had initially consulted her primary care physician, who referred her to our facility due to the persistent nature of her symptoms and the presence of a palpable mass at her previous cesarean scar. Physical examination revealed tenderness in the right lower quadrant and right suprapubic area, specifically over the cesarean scar, without signs of hernia. A palpable mass was detected at the cesarean scar site.

Laboratory tests were within normal ranges. An abdominal and pelvic contrast-enhanced CT scan revealed a 3.6 × 3 cm mass in the right lower quadrant and suprapubic region with mild enhancement (Figs 1,2). The mass extended through all the layers of the abdomen, including the aponeurosis and peritoneum. Upon admission, the patient was administered analgesics to manage her pain. She received intravenous acetaminophen (1 g every 6 h) for pain relief, supplemented with oral ibuprofen (400 mg every 8 h) as needed for additional analgesia. The patient was also given a prophylactic antibiotic, intravenous cefazolin (2 g every 8 h), to prevent post-surgical infection.

Surgery was performed, consisting of excision of the abdominal wall mass via a small incision over the previous scar, followed by repair of the aponeurosis using prolene sutures, without mesh due to a small defect in the abdominal wall postexcision. Intraoperative findings confirmed a well-circumscribed mass infiltrating through all layers of the abdominal wall. The surgical team ensured meticulous hemostasis and careful dissection to avoid damage to surrounding structures. The patient was discharged on the first postoperative day, and suture removal was performed without complications on the 10th day postoperation.

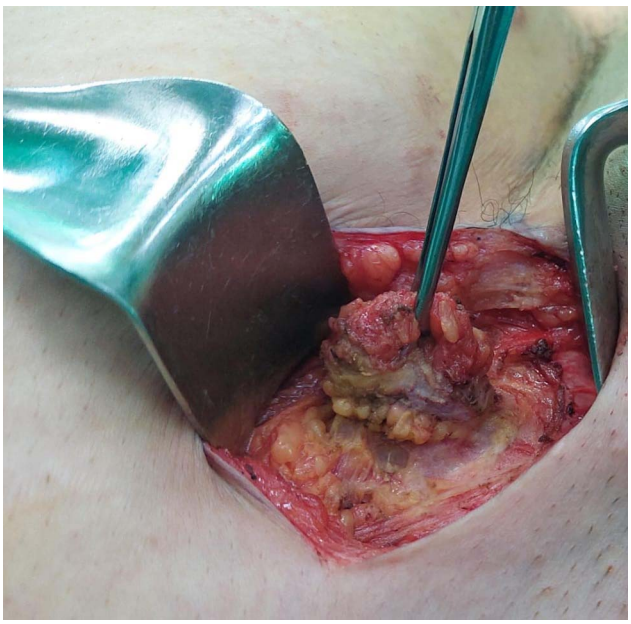

Figure 1. Mass 3.6×3 cm in contact with the aponevrosis and preperitoneal fat.

Figure 2. Computed tomography scan showing a 3.6 × 3 cm mass in the right lower quadrant of the abdomen.

The follow-up care will be conducted in an outpatient clinic setting. The patient is scheduled for follow-up visits at 2 weeks, 1 month, 3 months, 6 months, and 1-year postsurgery to monitor her recovery and assess for any signs of recurrence. During these visits, the patient will undergo physical examinations to evaluate the surgical site for proper healing, signs of infection, or the presence of any new masses. Pain levels will be assessed using a visual analog scale (VAS) to track any residual or recurrent pain.

Discussion

Our primary focus is to discuss the clinical manifestations, diagnostic approach, surgical intervention, and postoperative outcomes of AWE in this specific patient population. This case highlights the challenges in diagnosing and managing AWE, especially in individuals with a history of cesarean sections, and underscores the importance of a comprehensive understanding of this condition for optimal patient care.

AWE is a rare condition characterized by the presence of endometrial tissue within surgical scars[7]. The prevalence of AWE in cesarean scars is relatively low compared to other forms of endometriosis[8]. AWE, which infiltrates muscle tissue, is indeed a rare condition. A systematic review comprising 455 AWE patients found that ~80% of the patients had a history of prior surgery, with cesarean sections being the most common. The mean time interval between surgery and presentation of AWE was 2–5 years[9].

Two theories explain the occurrence of abdominal wall endometriosis after gynecological procedures. The surgical implantation theory suggests that endometrial tissue may inadvertently implant within the surgical incision during surgery, supported by observations of endometriosis developing at previous surgical sites[7]. On the other hand, the retrograde menstruation theory proposes that endometrial cells flow backward through the fallopian tubes during menstruation, reaching the abdominal cavity. These cells can then access the surgical scar through a patent tract created during prior surgery[10].

The site of AWE can lead to a variety of differential diagnoses, including hernia, abscess, lipoma, desmoid tumor, hematoma, lymphadenopathy, or malignancy[11]. Distinguishing AWE from these other conditions can be challenging, particularly when clinical symptoms are nonspecific.

Symptoms may manifest as a palpable mass in the abdominal region accompanied by cyclic pain, characteristic of endometriosis. General symptoms such as dysmenorrhea, dyschezia, dyspareunia, and bleeding from superficial lesions may also occur. However, it's important to note that cyclic pain is present in only 57% of patients, with the most common symptoms being the presence of a mass or the pain itself[12]. Our patient experienced a palpable mass with cyclic pain.

If characteristic symptoms are evident, healthcare providers may be more inclined to suspect AWE. Timely identification of AWE is essential, as it can impact treatment options. For instance, patients might prefer hormonal or pharmacological therapies over surgical intervention if diagnosed promptly. This underscores the significance of a precise diagnosis in informing treatment decisions.

Abdominal ultrasonography (US) or abdominopelvic computed tomography (CT) scans are the most commonly used preoperative diagnostic tools for suspected AWE. Additionally, MRI and fine-needle aspiration (FNA) are also useful, but the definitive diagnosis can only be confirmed by histopathological examination of the lesion[9]. A CT scan was the primary diagnostic tool used for our patient, being both cost-effective and commonly employed.

The preferred treatment for AWE is typically a total surgical excision of nodules. Previous reports indicate a pooled recurrence rate of 4.5%[13]. Long-term follow-up is crucial to monitor for recurrence or complications, although abdominal wall endometriosis generally has a low recurrence rate after complete excision. Recurrence typically manifests with cyclic symptoms and may occur months to years following the initial surgery[6]. Medical therapy, including NSAIDs, oral contraceptives, gonadotropin-releasing hormone analogues, and aromatase inhibitors, has been shown to alleviate symptoms without necessarily affecting the size of the lesions[14].

The rising incidence of AWE can be attributed to factors such as improved diagnostic techniques, increased awareness, changing surgical practices, and delayed diagnosis. Advanced imaging modalities aid in the detection of endometriosis, while heightened awareness prompts more accurate diagnoses. Increased rates of cesarean sections contribute to AWE development; as surgical procedures create opportunities for endometrial tissue implantation. Confirmation of endometriosis typically occurs through histopathological examination of surgical specimens obtained during excision, despite suggestive findings on preoperative imaging like MRI. Evaluation for other endometriosis foci and assessment of ovarian health are essential components of diagnosis and management.

The surgical interventions undertaken in our cases exemplify the cornerstone of management for AWE following cesarean sections. By employing meticulous surgical excision techniques, we successfully addressed the underlying pathology, providing significant relief from symptoms and promoting patient well-being. These surgical interventions not only underscore the importance of prompt recognition and targeted treatment of AWE but also highlight the pivotal role of surgical expertise in achieving favorable outcomes. Our aim is to highlight the link between precise surgical intervention and better clinical outcomes, underscoring the value of a multidisciplinary approach in managing abdominal wall endometriosis (AWE). This case report stresses the critical roles of early recognition, precise diagnostic imaging, successful surgical excision, collaborative healthcare, patient education, and thorough long-term follow-up after cesarean sections.

Conclusion

Our unique case study sheds light on AWE occurring after cesarean sections, which impacts muscle tissue, providing a comprehensive examination of symptoms, diagnosis, and the successful surgical intervention. It emphasizes recognizing AWE symptoms in such patients and the effectiveness of surgery for symptom relief. Healthcare providers must remain vigilant against AWE to ensure timely diagnosis and management. The study underscores the importance of including AWE in diagnostic considerations for patients with cyclic pain or swelling at prior surgical scars. Timely diagnosis, surgical excision, and histopathological evaluation are crucial for effective management. Enhanced provider awareness and interdisciplinary management are essential for favorable outcomes and recurrence prevention.

Ethical approval

Ethical approval for this study (Ethical Committee N° Res/F-01 (2) provided by the Ethical Committee SGH of Saint George Hospital, Beirut, Hadath on 6 may 2024.

Consent

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

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Author contribution

All authors have contributed equally to the work.

Conflicts of interest disclosure

The author declares no conflicts of interest.

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Not applicable.

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Data availability statement

I confirm if any datasets generated during and/or analyzed during the current study are publicly available, available upon reasonable request.

Provenance and peer review

Not applicable.

References

[1] Ibrahim R, Fadel A, Dika Z. Acute small bowel obstruction secondary to intestinal and appendiceal endometriosis. J Med Surg Public Health 2023; 1:100014.
[2] Goel P, Sood SS, Dalal A, *et al*. Cesarean scar endometriosis--report of two cases. Indian J Med Sci 2005;59:495–8.
[3] Saliba C, Jaafoury H, El Hajj M, *et al*. Abdominal wall endometriosis: a case report. Cureus 2019;11:e4061.
[4] Ding Y, Zhu J. A retrospective review of abdominal wall endometriosis in Shanghai, China. Int J Gynaecol Obstet 2013;121:41–4.
[5] Bektaş H, Bilsel Y, Sari YS, *et al*. Abdominal wall endometrioma; a 10-year experience and brief review of the literature. J Surg Res 2010;164: e77–81.
[6] Simoens S, Dunselman G, Dirksen C, *et al*. The burden of endometriosis: costs and quality of life of women with endometriosis and treated in referral centres. Hum Reprod 2012;27:1292–9.
[7] Sohrabi C, Mathew G, Maria N, *et al*. The SCARE 2023 guideline: updating consensus Surgical CAse REport (SCARE) guidelines. Int J Surg 2023;109:1136.
[8] Kyejo W, Moshi B, Massanga E, *et al*. Abdominal wall endometriosis in cesarean scar: a case report. SAGE Open Med Case Rep 2024;12: 2050313X241237333.
[9] Tangri MK, Lele P, Bal H, *et al*. Scar endometriosis: a series of 3 cases. Med J Armed Forces India 2016;72(Suppl 1):S185–8.
[10] Christina NM, Candrawinata VS, Lie H, *et al*. Abdominal wall endometriosis (AWE): Two case reports and literature review. Int J Surg Case Rep 2023;109:108495.
[11] Agha RA, Franchi T, Sohrabi C, *et al*. & SCARE Group. The SCARE 2020 guideline: updating consensus Surgical CAse REport (SCARE) guidelines. International journal of surgery (London, England) 2020;84:226–30.
[12] Stefanou SK, Tepelenis K, Stefanou CK, *et al*. Abdominal wall endometriosis: a case report. J Surg Case Rep 2021;2021:rjab055.
[13] Horton JD, Dezee KJ, Ahnfeldt EP, *et al*. Abdominal wall endometriosis: a surgeon's perspective and review of 445 cases. Am J Surg 2008;196:207–12.
[14] Piriyev E, Namazov A, Mahalov I, *et al*. Clinical and surgical characteristics of abdominal wall endometriosis: a multicenter case series of 80 women. In vivo 2023;37:756–62.