

Scar Endometriosis: Clinical Features, Diagnosis, and Surgical Management – A Case SeriesA Priyadharhini¹, Jayanthi R²

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Abstract

Background: Scar endometriosis is a rare type of extrapelvic endometriosis in which functional endometrial tissue can be found in the operative scar or surrounding skin, developing most commonly following cesarean section. Its variable clinical presentation frequently leads to misdiagnosis and delays in management. We describe a case series of five patients with scar endometriosis including unique presentations such as cyclical pain, atypical non-cyclical presentation, non-surgical recurrence and points of joint scars such as episiotomy.

Results: All patients had a painful mass of the scar site, and symptoms were frequently related to the menstrual cycle but other nonclassical presentations have been noted. Imaging modalities including ultrasonography and magnetic resonance imaging were important in preoperative evaluation, however histopathological diagnosis was confirmed in all cases. This postoperative course was followed by all patients who underwent surgical resection with adequate margins and experienced complete resolution of symptoms without significant relapse in follow-up.

Conclusion: This case series emphasizes the need for a high index of suspicion for scar endometriosis in any female patient with symptoms associated with surgical scars and particularly, presents this entity even in atypical cases; it also confirms that surgical excision remains the gold standard treatment.

Keywords: Scar endometriosis; Abdominal wall endometriosis; Cesarean section; Surgical scar; Case series; Extrapelvic endometriosis; Cyclical pain; Episiotomy scar; Surgical excision; Recurrence

Introduction

Scar endometriosis is a rare type of extrapelvic Endometriosis involving the presence of functional endometrial glands and stroma within or adjacent to surgical scars, typically after obstetrical and gynecological surgeries, especially cesarean section. It is an iatrogenic condition that occurs when endometrial tissue gets implanted directly into the wound in a surgical procedure and grows there under hormonal influence [1]. The incidence of scar endometriosis after cesarean section is reported to be approximately 0.03%–0.4% [2], but the real prevalence may be underestimated because it may be initially misdiagnosed or unnoticed. Typically patients present with a triad of cyclical pain, an abdominal mass at or near the surgical scar and symptoms in keeping with failure of menstruation. Atypical presentations are

not infrequent, which complicate the diagnosis [3]. The implantation theory primarily has been postulated to explain the pathogenesis, but other mechanisms involving lymphatic or hematogenous dissemination have also been suggested. Patience may potentially pass weeks to decades on with Mugulya before getting deciphered, diverting a kwimejija liyo ya mashart lisi na dodaz ba maswingo [2,3].

Diagnosis mainly relies on clinical examination and is confirmed via imaging modalities including ultrasound, CT or MRI with histopathological confirmation remaining the gold standard. FNAC can be helpful for preoperative diagnosis particularly [1]. The preferred therapy is surgical excision with wide margins, which has low recurrence rates. Pharmacologic management has little utility and is primarily reserved for those non-surgical candidates [3].

Case Presentation

Case 1

Case Presentation: A 28-year-old multiparous woman (P2L2) presented to the surgical opd department with progressively increasing pain and swelling over her lower abdominal scar for last 8 months. Her previous pregnancy was three years before, an uneventful lower segment cesarean section. The patient medically described the pain as localized, dull aching in nature, that was constant but intermittently exacerbated with her menstrual cycles. With time, she monitored an increased severity of pain with the onset of menses and a feeling of heaviness at the site of scarring. She presented with an insidiously swelling over the same region in conjunction with a nodular swelling which increased gradually. He denied ho history of fever, discharge, weight loss or trauma.

Examination revealed a healed Pfannenstiel scar. On palpation, a firm, non-fluctuant, tender mass about 3 × 2 cm in size was detected in the subcutaneous plane adjacent to the right lateral edge of the scar. Clinically, it was not an incisional hernia since the swelling was non-reducible, non-transilluminable and showed no cough impulse. The overlying skin was unremarkable, and there was no discoloration or any signs of a sinus Track.

Ultrasound examination showed a subcutaneous hypoechoic lesion with internal echogenicity suggesting an indeterminate soft-tissue mass. Magnetic resonance imaging (MRI) then demonstrated a well-defined iso- and hypointense lesion with heterogeneous signal intensity within the allantois, highly suggestive of an endometriotic deposit. Informed by the cyclical pain clinical history, and imaging features, a provisional diagnosis of Endometriosis with scarring was given. Wide local excision of the lesion with adequate margins was performed under regional anesthesia. Intraoperatively, there was clear adherence of the lesion to surrounding fibrous tissue but sparing of deep fascial layers. Histopathological examination revealed endometrial glands and stroma with areas of hemorrhage, allowing the diagnosis of scar endometriosis. The postoperative course was unremarkable, and the patient remained asymptomatic at six-month follow-up without any recurrence.

Case 2

A 32-year-old lady reported with complaint of lower abdominal pain and a mass at the site of cesarean section scar after 1 year. Five years prior, she had undergone a cesarean delivery. In contrast to most presentations, the pain reported by this patient was constant rather than cyclical and only mildly aggravated during menses. She had previously received treatment elsewhere for suspected stitch granuloma but with resolved symptoms as a complex presentation. Palpation revealed a firm, irregular, mildly tender swelling of size 2 × 2 cm in the left lateral aspect of the scar. The lesion was fixed to underlying structures, and he had no associated inflammatory signs (eg, erythema or warmth). There was no associated lymphadenopathy.

On ultrasound, she was found to have a heterogeneous lesion with ill-defined borders and additional imaging was performed. Fine-needle aspiration cytology (FNAC) revealed loose aggregates of epithelial cells admixed with scant stroma, stromal fragments and hemosiderin-laden macrophages, compatible with endometriosis. An MRI was then performed and exhibited findings consistent with a pigment endometriotic focus in the abdominal wall.

Due to the persistence of symptoms and negative repeat diagnostic imaging, surgical excision was planned. Histopathology showed the lesion was excised with clear margins, and intraoperative findings are of dense fibrotic adhesions to adjacent tissues. The isolated fibrous tissue was re-evaluated, and histopathological study corroborated diagnosis of scar endometriosis by showing endometrial glands trapped in fibrous tissue along with features of cyclical hemorrhage. The patient was symptom-free after surgery. This illustrates how atypical presentations can often be delayed in diagnosis, or overlooked due to the absence of classical cyclical pain associated features.

Case 3

A 35-year-old woman presented to us with a history of slowly progressive swelling in the right iliac fossa region over her old cesarean scar since past one year associated with painful menses (dysmenorrhea). It is the first time she was given a caesarean over seven years ago. Analysis of the Problem The swelling first was as small as a pea and slowly increased, leading to a suspicion of incisional hernia.

Physical examination revealed palpation of a 4×3 cm firm, tender mass adjacent to the scar. The swelling was irreducible and did not have a cough impulse, so hernia was unlikely clinically but remained in the differential diagnosis. The overlying skin was unremarkable, and there were no signs of infection. Ultrasonography demonstrated a solid mass without evidence of fascial defect that ruled out hernia. MRI showed a well-circumscribed lesion involving both subcutaneous tissue and underlying fascia, with multi-focal low- and high-signal features indicating endometriosis. While cyclical nature of pain implicitly rendered the diagnosis of scar endometriosis.

Surgical management consisted of wide excision of the lesion together with involved fascial tissue. Mesh was used to repair through the abdominal wall defect for reestablishing the structural integrity of the abdominal wall. Histopathological examination revealed endometrial glands and stroma with accompanying areas of hemorrhage consistent with scar endometriosis. The patient made an uncomplicated recovery, and remained asymptomatic at one-year follow-ups with no signs of recurrence. Takeaway Message The present case highlights that it is essential to distinguish scar endometriosis from surgical entities like hernia to avoid delay in proper management of the condition.

Case 4

The patient, a 30-year-old woman, comes to the surgical outpatient department complaining of recurrent pain and swelling over her previous cesarean section scar area for past one year. Significantly, she had previously received a surgical excision of analogous swelling at the same site two years back which was pathologically identified as Endometriosis. The patient stated that she was asymptomatic for nearly a year after the first operation but later on developed recurrence of pain with nodular swelling increasing in size. Her pain was episodic, occurring with her menstrual periods and impeding her ability to go about daily life activities.

At palpation, there was a 2.5×2 cm firm, irregular, tender mass along the previous surgical scar with mixed fibrosis and scar thickening. However, the swelling was felt to be fixed to the deep structures. No erythema, discharge or systemic signs of infection were observed.

Ultrasonography showed a heterogeneous lesion that reached the deeper layers, and MRI revealed an infiltration of the rectus sheath, indicating possible recurrence of scar endometriosis with irregular borders. The prior excision and recurrence history warranted a more aggressive surgical approach. He underwent wide local excision, with fascial resection of surrounding tissue from the tumor. As a result of the resulting gap in the abdominal wall, mesh reinforcement was necessary.

Histopathological examination again revealed endometrial glands and stroma with fibrotic and hemorrhagic areas, consistent with recurrent scar endometriosis. Postoperatively, the patient had an uneventful course and was recommended for regular follow-up. Recurring disease was not noted at one-year follow-up. This case underscores the need for appropriate surgical margins at time of initial excision, since incomplete resection is a major risk factor for recurrence.

Case 5

We report a case of a 26 years old primiparous lady who complained of pain and swelling at the site of episiotomy scar done six months back. She was a 28-year-old female with two years history of normal vaginal delivery complicated by mediolateral episiotomy. On examination, the patient complained of pain from the perineum and cyclical in nature related to menstruation. She also experienced pain whilst sitting as well as during intimate relations, which severely limited her activities of daily living.

Local examination revealed a mild, firm, tender nodular lesion of around 1.5×1 cm over episiotomy scar site. The lesion was nonfluctuant and adherent to surrounding soft tissue. Infection was absent in terms of no redness, warmth or discharge. Considering the unusual site, a granuloma, inclusion cyst and scar tissue were considered in the differential diagnosis initially. Perineal sonography revealed a hypoechoic lesion with less vascular acoustic characteristics. MRI confirmed the lesion and characterized it as a well defined soft tissue mass with signal intensity changes consistent with endometriotic tissue. Diagnosis of scar endometriosis at the episiotomy site was made based on clinical history of cyclical pain and imaging findings.

The patient had the lesion completely excised under regional anesthesia. Resected Specimen: During the operation, the size of the lesion was not involved deeper and only headed in subcutis tissue. A histopathological feature with the characteristic presence of endometrial glands, stroma and hemosiderin-laden macrophages confirmed the diagnosis as endometriosis. Post-operative period was uneventful and patient was symptom-free at follow-up. This case highlights the unique entity of scar endometriosis, which can occur not only in cesarean scars but also in other obstetric surgical sites including episiotomy scars and likely contributes to misdiagnosis due to its uncommon presentation.

Discussion

Scar endometriosis is a rare but increasingly recognized form of extrapelvic Endometriosis, most commonly seen after past obstetric and gynecological surgery history, particularly cesarean section. The most common explanation for its pathogenesis is the direct implantation theory, in which viable endometrial cells are inoculated into the surgical wound when the uterus is incised and proliferate under hormonal regulation [1]. All three presented cases otherwise support this theory, as they were asymptomatic for some years after cesarean delivery; and [2] strongly argues also in support of the temporal relationship between surgery and symptom onset. Scar endometriosis often has a variable clinical presentation, resulting in delays with appropriate diagnosis. The classical triad of cyclical pain, palpable mass and prior surgery is highly suggestive but not always present [3]. Two out of our three patients presented with classic cyclical pain associated with the menstrual cycle, but one also had isolated non-cyclical pain which can make diagnosis difficult. This variability can frequently result in misdiagnosis, with stitch granuloma, lipoma, abscess or

incisional hernia initially being considered [4]. This underscores the importance for a high index of suspicion, particularly in reproductive-age women with complaints related to the scar.

Imaging is an essential part of assessment within suspected cases. Ultrasonography is commonly the first-line modality since it can be reasonably performed and low-priced; nevertheless, findings are often nonspecific [5]. Magnetic resonance imaging (MRI) offers better soft tissue characterization, and facilitates in evaluating the extent of involvement with deeper structures as well as preoperative assessment [6]. MRI was useful in our cases for confirming the diagnosis and managing surgical management. FNAC can be supportive as it may show endometrial glands, stromal cells, and hemosiderin-laden macrophages, although this is not performed routinely (7).

Histopathological examination of the tumor is the gold standard to establish a definitive diagnosis [1]. The observation of both endometrial glands and stroma, along with areas of hemorrhage, is diagnostic. Surgical excision and histopathological examination confirmed the diagnosis in all three cases in our series.

Treatment of choice is surgical excision (with negative margins) which has low recurrence rates [8]. Incomplete excision can cause recurrence which stresses the need for full removal including infiltrated surrounding tissue. However in cases where deeper structures such as fascia are also involved (as seen in our third case), reconstruction with mesh repair would be required [9]. Hormone therapy offers limited and temporary results in terms of medical management for AUB and is typically reserved for patients who are not candidates for surgery. [3]

Awareness, rapid diagnosis and timely surgical intervention are the key factors in preventing complications and improving patient outcomes. Preventive approaches like meticulous irrigation of the wound and prevention of contamination with endometrial tissue at cesarean section have been proposed to decrease the likelihood of implantation [2,10]. Scar endometriosis is a rare entity that must be included in the differential diagnosis of any mass that develops at the site of trauma, especially if it takes place after surgery and/or in women with history of cesarean section. Increased clinician awareness with judicious use of imaging and timely surgical intervention will lead to reduced morbidity and prevent delays in diagnosis.

Summary

Scar endometriosis is a rare but important form of extrapelvic endometriosis that commonly develops following obstetric and gynecological surgeries, particularly cesarean section. This case series describes five patients with diverse clinical presentations, including classical cyclical pain, atypical non-cyclical pain, recurrent scar endometriosis, fascial involvement requiring mesh repair, and the uncommon occurrence of episiotomy scar endometriosis. Ultrasonography and magnetic resonance imaging were valuable for preoperative assessment, while histopathological examination confirmed the diagnosis in all cases. Wide local surgical excision with adequate margins resulted in complete symptom resolution without significant recurrence during follow-up. The series highlights the importance of maintaining a high index of suspicion in women presenting with painful surgical scar masses and emphasizes that early diagnosis, appropriate imaging, histopathological confirmation, and complete surgical excision remain the cornerstone of successful management.

Conclusion

Scar endometriosis is a rare but significant form of extra-pelvic-endometriosis that should be considered in the differential diagnosis of women of reproductive age with painful mass at or near a previous surgical biopsy. Cyclical pain is a defining clinical feature but atypical variations in presentation are common and can contribute to delayed diagnosis or mismanagement. Early detection relies on a high index of suspicion

and may be aided by imaging modalities, such as ultrasound and MRI; however, histopathological examination is the gold standard for diagnosis. Appropriately performed with adequate margins, surgical excision is the treatment of choice and provides excellent results with minimal recurrence. The diverse presentations seen in this case series of disease recurrence and unusual location (eg, episiotomy scars) underscore the importance of clinical appraisal and intervention as required to limit morbidity and enhance quality-of-life outcomes.

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Reference

1. Zhang J, Liu X, Li F. Clinical characteristics of abdominal wall endometriosis: A retrospective study. *Int J Clin Exp Med*. 2019;12(3):2563–2568.
2. Taylor HS, Kotlyar AM, Flores VA. Endometriosis is a chronic systemic disease: clinical challenges and novel innovations. *Lancet*. 2021;397(10276):839-852.
3. Becker CM, Bokor A, Heikinheimo O, Horne AW, Jansen F, Kiesel L, et al. ESHRE guideline: endometriosis. *Hum Reprod Open*. 2022;2022(2):hoac009.
4. Giudice LC, Oskotsky T, Falako S, Opoku-Anane J, Sirota M. Endometriosis in the era of precision medicine and its impact on sexual and reproductive health across the lifespan and in diverse populations. *FASEB J*. 2023;37(8):e23095.
5. Abbott J, Abrao MS, Al-Jefout M, Bedaiwy MA, Benagiano G, Burns KA, et al. A call for new theories on the pathogenesis and pathophysiology of endometriosis. *J Minim Invasive Gynecol*. 2024;31(5):371-377.
6. Zhang M, Xu T, Tong D, Li S, Yu X. Research advances in endometriosis-related signaling pathways: a review. *Biomed Pharmacother*. 2023;163:114848.
7. Li Q, Shi J, Yi D, Li X, Gu Z. The pathogenesis of endometriosis and adenomyosis: insights from single-cell RNA sequencing. *Biol Reprod*. 2024;110(3):543-556. Vannuccini S, Clemenza S, Rossi M, Petraglia F. Hormonal treatments for endometriosis: the endocrine background. *Rev Endocr Metab Disord*. 2022;23(2):333-355.
8. Chapron C, Marcellin L, Borghese B, Santulli P. Rethinking mechanisms, diagnosis and management of endometriosis. *Nat Rev Endocrinol*. 2023;19(2):111-130.