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Case Series

A mysterious case series of scar endometriosis

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ABSTRACT

Scar endometriosis is an uncommon form of extrapelvic endometriosis that most frequently develops following obstetric or gynaecological surgery, particularly caesarean section. Because its clinical presentation may mimic other scar-related lesions, diagnosis is frequently delayed. A painful scar-associated mass with cyclical variation in symptoms should raise suspicion of scar endometriosis. We present a retrospective case series of 3 women diagnosed with scar endometriosis at MCH Holenarasipura between January 2026 and June 2026. Clinical presentation, previous surgical history, imaging findings, operative findings, treatment and histopathological confirmation were reviewed. The three patients were aged 24, 26 and 27 years. All had a previous history of caesarean section. The interval between the preceding surgery and presentation was 18 months, 24 months and 16 months. The predominant clinical presentation was a painful scar-associated swelling, with all three patients reporting cyclical exacerbation of pain during menstruation. Ultrasonography was performed in all patients; MRI was not performed in any patient. All three patients underwent wide local excision of the endometriotic lesion. Histopathological examination demonstrated endometrial glands and stroma within fibrous and/or skeletal muscle tissue, confirming scar endometriosis. Scar endometriosis should be considered in the differential diagnosis of a painful abdominal or pelvic surgical scar, particularly in women with a previous caesarean section. A high index of suspicion, appropriate ultrasonography and complete surgical excision with histopathological confirmation are important for definitive treatment and prevention of recurrence.

Keywords: Caesarean section, Scar endometriosis, Abdominal wall endometriosis, Endometrioma, Wide local excision, Histopathology

INTRODUCTION

Endometriosis is characterized by presence of endometrial glands and stroma outside normal uterine cavity. Although disease predominantly involves pelvic structures, extra pelvic manifestations can occur. Abdominal wall/scar endometriosis is an uncommon manifestation and is most frequently encountered following CS. Reported incidence following caesarean delivery is low, and condition may remain undiagnosed because its symptoms overlap with several benign surgical scar disorders.¹⁻³

Scar endometriosis typically presents as a firm or tender nodule in/adjacent to previous surgical scar. Classical presentation consists of cyclical pain and/or swelling

corresponding to menstruation. However, cyclical nature of symptoms may be absent, resulting in diagnostic difficulty. Differential diagnoses include suture granuloma, abscess, lipoma, sebaceous cyst, fat necrosis and incisional hernia.³⁻⁵

The diagnosis is primarily clinical and can be supported by ultrasonography. Histopathological examination of the excised lesion remains important for definitive confirmation. Wide local excision with adequate margins is considered the treatment of choice, particularly for lesions involving the abdominal wall.⁶⁻⁸

We report three cases of scar endometriosis with variable clinical presentations and discuss the diagnostic

challenges, ultrasonographic findings, surgical management and histopathological confirmation.

CASE SERIES

Case 1

A 24-year-old P2L2 woman presented to the Department of Obstetrics and Gynaecology with a swelling and pain over the previous Pfannenstiel surgical scar for 18 months. She had undergone two caesarean sections, with the last caesarean section performed two years previously.

The patient reported that the pain increased during menstruation. There was no progressive enlargement of the swelling. There was no history of fever, discharge from the swelling or preceding trauma.

On examination, a 3×4 cm firm, tender nodule was identified over the previous surgical scar. The lesion was mobile and the overlying skin was normal. There were no clinically palpable regional lymph nodes.

Baseline laboratory investigations were normal. Ultrasonography of the abdominal wall demonstrated a hypoechoic and heterogeneous lesion measuring 3×4 cm, located within the subcutaneous tissue and closely related to the previous surgical scar.

Based on the clinical and ultrasonographic findings, scar endometriosis was considered.

The patient underwent wide local excision of the lesion under spinal anaesthesia. The lesion was excised completely with an adequate margin of surrounding healthy tissue from the subcutaneous plane.

Histopathological examination revealed endometrial glands and endometrial stroma within fibrous tissue, with hemosiderin-laden macrophages, confirming the diagnosis of scar endometriosis.

The post-op period was uneventful. Patient was discharged on postoperative day 4 and remained symptom-free during 4 months of follow-up, with no evidence of recurrence.

Case 2

A 26-year-old para 1 living 1 woman presented with a painful swelling at the site of a previous caesarean section

scar for 6 months. She had undergone one caesarean section, performed two years prior to presentation.

The patient described cyclical pain, with increase during menstruation. The swelling had gradually increased in size over 6 months. There was no history of fever, local discharge or bowel/bladder symptoms.

Clinical examination revealed a firm, tender, mobile nodule measuring approximately 4×4 cm involving the left portion of the scar.

Ultrasonography showed a hypoechoic lesion involving the subcutaneous tissue. MRI was not performed.

The patient underwent wide local excision of the lesion. Intraoperatively, the mass was found to involve subcutaneous tissue and was excised completely.

Histopathology showed endometrial glands and stroma surrounded by fibrous tissue, with hemorrhage and hemosiderin deposition, consistent with scar endometriosis.

The postoperative recovery was uncomplicated. At three months of follow-up, the patient remained asymptomatic with no clinical evidence of recurrence.

Case 3

A 27-year-old para 3 living 2 women presented with painful scar swelling of 6 months. She had a history of caesarean section performed 16 months earlier.

The patient reported cyclical pain during menstruation. Examination revealed a 3×3 cm firm nodule involving the previous surgical scar.

Ultrasonography revealed a hypoechoic lesion measuring 3×3 cm in the subcutaneous plane. MRI was not performed. The patient underwent complete surgical excision of the lesion. The excised specimen was sent for histopathological examination.

Microscopic examination demonstrated endometrial glands and stroma within fibrous tissue with hemorrhage and hemosiderin-laden macrophages, confirming scar endometriosis. The postoperative course was uneventful. At 3 months follow-up, the patient was symptom-free and there was no evidence of recurrence.

Table 1: Clinical features of the three cases.

Parameters	Case 1	Case 2	Case 3
Age (in years)	24	26	27
Parity	P2L2	P1L1	P3L2
Previous surgery	2 LSCS	1 LSCS	Caesarean section
Interval from last surgery	2 years	2 years	16 months
Duration of symptoms	18 months	6 months	6 months

Continued.

Parameters	Case 1	Case 2	Case 3
Scar pain	Yes	Yes	Yes
Cyclical pain	Yes	Yes	Yes
Scar swelling/nodule	Yes	Yes	Yes
Size of lesion	3×4 cm	4×4 cm	3×3 cm
Ultrasound findings	Hypoechoic, heterogeneous, subcutaneous	Hypoechoic, subcutaneous	Hypoechoic, subcutaneous
MRI/FNAC	MRI not done	MRI not done	MRI not done
Surgical procedure	Wide local excision	Wide local excision	Complete surgical excision
Histopathological confirmation	Yes	Yes	Yes
Postoperative complications	None	None	None
Follow-up duration	4 months	3 months	3 months
Recurrence	None	None	None

DISCUSSION

Scar endometriosis is an uncommon but clinically important manifestation of endometriosis. It should be considered whenever a woman with a previous caesarean section or pelvic surgical procedure develops a painful mass at or close to the operative scar. The condition is thought to result predominantly from implantation of endometrial tissue into the abdominal wall during surgery.^{1,2}

Several mechanisms have been proposed for the development of scar endometriosis. The most widely accepted explanation is direct implantation of endometrial cells into the surgical wound during uterine incision and closure. These implanted cells may subsequently proliferate under hormonal stimulation and develop into an endometriotic lesion. Other proposed mechanisms include lymphatic or vascular dissemination and altered local immune responses.⁹⁻¹¹

The interval between surgery and clinical presentation may be prolonged. Therefore, a remote history of caesarean section should not exclude the diagnosis. The present cases demonstrate presentation between 16 months and 2 years after the preceding caesarean section.

The classical clinical presentation is a painful scar nodule with cyclical exacerbation during menstruation. In the present series, all three patients had cyclical pain. Scar endometriosis may clinically mimic suture granuloma, abscess, lipoma, sebaceous cyst, fat necrosis or incisional hernia.³⁻⁵

Ultrasonography is generally the initial imaging modality because it is readily available and can characterize the location and relationship of the lesion to the abdominal wall layers. Typical sonographic findings include a heterogeneous or hypoechoic lesion, sometimes with internal echogenic foci and irregular or spiculated margins.^{4,12} In the present series, ultrasonography was performed in all three patients and demonstrated

hypoechoic lesions in the subcutaneous plane. MRI was not performed in any of the patients.

Definitive diagnosis is generally established by histopathological examination following excision. Histologically, endometriosis is characterized by endometrial glands and stroma embedded within fibrous tissue and/or skeletal muscle, sometimes accompanied by hemorrhage and hemosiderin-laden macrophages.^{6,13}

Complete surgical excision is the treatment of choice for scar endometriosis. Adequate clearance of the lesion and involved surrounding tissue is important because incomplete excision is associated with recurrence. Large lesions involving the rectus sheath or muscle may create a significant abdominal wall defect and require reconstruction, sometimes with mesh.^{7,8}

Medical treatment with hormonal suppression may reduce symptoms temporarily but generally does not provide definitive treatment for an established scar lesion. Recurrence after cessation of medical therapy has been reported. Therefore, hormonal treatment is usually considered an adjunct or alternative when surgery is unsuitable rather than a replacement for complete excision.¹⁴

Prevention is also important because the increasing frequency of caesarean delivery may contribute to an increasing number of scar endometriosis cases. Measures proposed include meticulous surgical technique, avoidance of contamination of the abdominal wound with endometrial tissue, use of separate instruments or sponges where appropriate, thorough irrigation before closure and careful closure of the uterine and abdominal layers.¹⁵⁻¹⁷

The present three-case series emphasize that scar endometriosis should be considered in women with a previous caesarean section who develop a scar-associated painful swelling, particularly when symptoms are cyclical. Ultrasonography can assist in diagnosis and delineate the lesion, while histopathological examination confirms the diagnosis.

CONCLUSION

Scar endometriosis should be included in the differential diagnosis of any painful or enlarging mass involving a previous caesarean or pelvic surgical scar. The absence of cyclical symptoms should not exclude the diagnosis. A detailed surgical history, careful clinical examination and appropriate ultrasonography can facilitate diagnosis. Complete wide local excision remains the definitive treatment, with histopathological confirmation essential. Long-term clinical follow-up is advisable because recurrence can occur, particularly following incomplete excision.

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