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Case Report

A classic case of caesarean scar endometriosis in 39-year-old women presenting with cyclical abdominal pain: a case report

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ABSTRACT

Scar or incisional scar endometriosis is a rare but increasingly recognised complication following obstetric and gynaecological surgeries, particularly caesarean section and others, including hysterectomy and myomectomy. It is frequently misdiagnosed due to its nonspecific presentation, which often mimics abscesses, hernias, hematomas, granulomas or neoplasms. This case report outlines a case of a female aged 39 years who reported with complaints of abdominal pain related to the menstrual cycles and a palpable infra-umbilical mass years after caesarean delivery. Ultrasonography revealed a hypoechoic solid lesion with internal vascularity, and fine needle aspiration cytology was suggestive of scar endometriosis. The patient underwent complete surgical excision, and histopathology confirmed the diagnosis. The case highlights the importance of clinical suspicion when a patient presents with the classical triad, appropriate imaging, and histopathological confirmation in diagnosing scar endometriosis. Surgical excision remains the definitive treatment.

Keywords: Scar endometriosis, Abdominal wall mass, Caesarean section, Surgical scar, Ectopic endometrial tissue, Cyclical abdominal pain, FNAC, Abdominal or pelvic surgery

INTRODUCTION

Endometriosis is defined as the presence of functional endometrial tissue, including both stroma and glands outside the endometrium, and often affects reproductive-age females, with an estimated prevalence of 6-10%.¹ It is a benign proliferative disorder that is locally invasive and disseminates widely. It may involve both pelvic and extrapelvic locations, most frequently affecting the ovaries, uterine ligaments, rectovaginal septum, posterior cul-de-sac, abdominal wall and pelvic peritoneum.²⁻⁵

Surgical scar endometriosis, also referred to as incisional endometrioma or iatrogenic endometriosis, is an uncommon complication following procedures, such as caesarean delivery, myomectomies and supracervical or total hysterectomies, accounting for 0.03-0.45% of all cases of endometriosis.^{2,3}

The pathogenesis is most commonly explained by the direct implantation theory, where endometrial tissue is iatrogenically implanted into the wound during surgery.^{1,2}

A strong diagnostic vigilance is needed to include this entity in the diagnostic hypothesis of a woman reporting the characteristic triad of cyclical abdominal pain, palpable mass near/at surgical scar, and a history of prior abdominal surgery.³ However, due to overlap with other differential conditions such as granuloma, abscesses, hematomas, neuromas, hernias/even neoplastic tissues, diagnosis is often delayed, and misdiagnosis remains common.^{3,6} Imaging aids in diagnosis, while histopathological examination provides definitive confirmation.

CASE REPORT

A married, 39-year-old, multiparous Indian female with no significant medical comorbidities reported to the

Obstetrics and Gynaecology clinic at CRH, Sikkim, with complaints of cyclical abdominal pain during menstruation for the past six years, which began two days before the cycle and continued till a week after. The pain had progressively increased in intensity over the years and, over the past month, had become continuous. The patient reported undergoing two elective caesarean sections performed 11 years and seven years back, along with bilateral tubal ligation during her second delivery. The postoperative period following the second caesarean section was uneventful, and the interrupted sutures were removed on the tenth postoperative day.

On examination, a Pfannenstiel scar was noted in the lower abdominal region. A midline infra-umbilical nodule measuring 2×2 cm was palpable superficially at approximately 5-6 cm below the umbilicus, associated with tenderness. Additionally, the nodule was also immobile, non-reducible and non-compressible on palpation. Based on clinical assessment, the differential diagnosis comprised abscess, surgical scar endometriosis, and surgical scar hernia.

Typically, an abscess develops days or weeks following the surgery and does not correlate with the menstrual cycle; there is no history of cyclical pain. Additional symptoms associated with an abscess include fever, purulent discharge from the local site and a tender, fluctuant mass with local warmth and redness.

On the other hand, there is no menstrual link with surgical scar hernia pain, which is mostly related to strain and exertion. It is a soft, reducible mass that increases in size on coughing or while performing the Valsalva manoeuvre. There can be additional gastrointestinal symptoms like constipation or obstructive symptoms if the bowel is involved in the hernia.

Next, a USG was performed, which showed a well-defined hypoechoic solid nodule measuring 37×25×19 mm in the infra-umbilical region in midline with internal vascularity, suggestive of scar endometriosis.

Subsequently, FNAC was performed, which revealed sheets and clusters of epithelial cells arranged in a honeycomb pattern. Individual cells were uniform, with round to oval bland nuclei and a moderate amount of cytoplasm. A few fragments of stromal tissue and clusters of activated macrophages were seen. Background of haemorrhagic along with scattered hemosiderin-laden macrophages, cyst macrophages, and abundant inflammatory cells (Predominantly neutrophils) were present, suggestive of scar endometriosis.

The physical examination, which showed a mass above the Pfannenstiel incision, positive USG and FNAC result, and the classical history of cyclical abdominal pain, positive caesarean section, were used to diagnose caesarean scar endometriosis.

The patient subsequently underwent surgical excision. Intraoperatively, a 3×3×2 cm endometrioma was found four cm deep to the skin, encasing the rectus sheath and rectus muscle in the midline (Figure 1 and 2). We dissected, excised, and removed the entire endometriotic mass from the patient. Gross (Figure 3) and cross-sectional view (Figure 4) of the excised specimen are also demonstrated. Histopathological evaluation revealed dense fibromuscular tissue with interspersed endometrial gland and stroma, with adjacent tissue showing chronic inflammation and lymphoid aggregates in places, findings consistent with scar endometriosis (Figures 5-7).



Figure 1: Intraoperative photograph showing endometriotic tissue at the abdominal wall.



Figure 2: Intraop photograph demonstrating dissection of endometriotic mass from surrounding structures.



Figure 3: Gross specimen of excised endometriotic mass.

The patient had an uneventful postoperative period. The patient was discharged on the third day following surgery, followed by review in the outpatient department.



Figure 4: Cross-sectional view of the excised specimen with characteristic chocolate colored fluid.

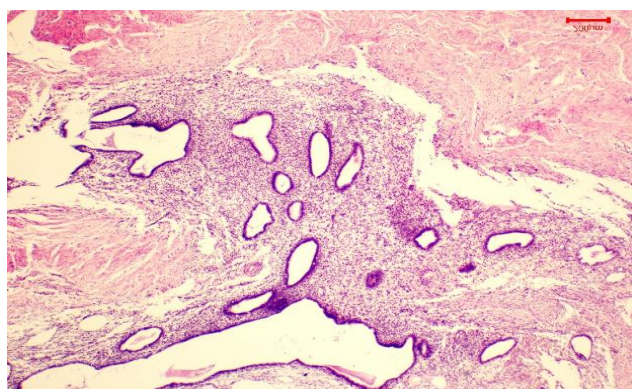


Figure 5: Histopathological image (4×) of the excised tissue showing benign endometrial cells lining the endometrial glands and stroma with fibromuscular tissue in hematoxylin and eosin stain.

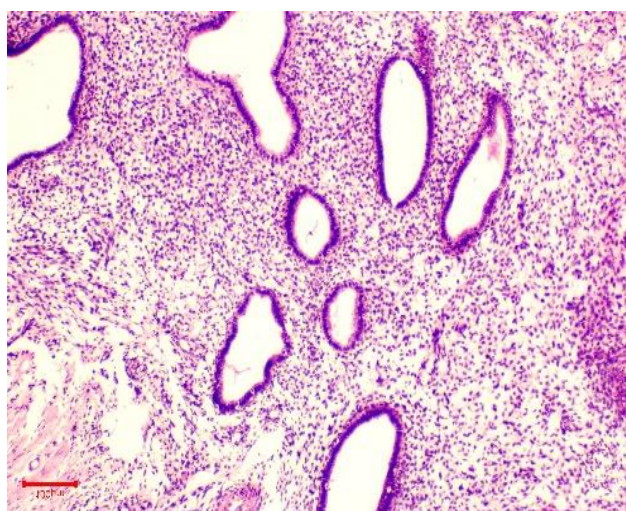


Figure 6: Histopathological image (10×) of the excised tissue showing benign endometrial cells lining the endometrial glands in hematoxylin and eosin stain.

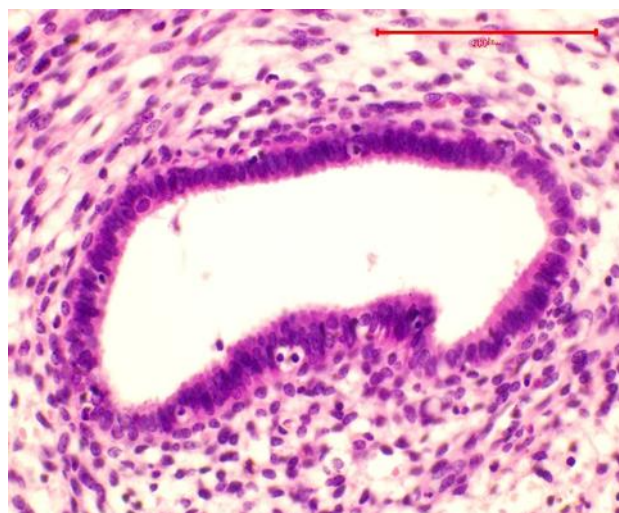


Figure 7: Histopathological image (40×) of the excised tissue showing detailed glandular architecture consistent with endometriosis in hematoxylin and eosin stain.

DISCUSSION

This case report describes a standard case of caesarean scar endometriosis. In addition to outlining optimal management strategies, we showed how to identify the characteristic presentation and make the clinical diagnosis.

Growth of functional endometriotic tissue outside the uterine mucosa is the hallmark of this gynaecological condition.

Scar endometriosis is a relatively uncommon, extra-abdominal form of endometriosis that develops following abdominal procedures such as caesarean section (the most common site), hysterectomy, tubectomy and myomectomy.³

The hallmark clinical presentation is a triad of cyclical pain, an abdominal mass near or at a surgical scar site, and a history of prior abdominal/pelvic surgery.³

In addition to obstetric and gynaecological clinics, these patients may also visit general surgery, plastic surgery or orthopaedic surgery. As a result, patients with the aforementioned unique clinical trio require special attention. Establishing the diagnosis and ruling out other differential diagnoses requires a thorough history taking, clinical examination and imaging studies. The interval between surgery and symptom onset can vary widely, often leading to delayed diagnosis.⁶

USG (ultrasonography), CT (computed tomography) and MRI (magnetic resonance imaging) are the imaging modalities that can help diagnose scar endometriosis. Given its wide availability and cost-effectiveness, USG is usually the primary imaging modality, in which the lesion appears hypoechoic and heterogeneous with echogenic

areas.^{3,5} In contrast-enhanced CT, scar endometriosis appears as a well-defined, enhancing, solid soft-tissue lesion.

MRI demonstrated high diagnostic accuracy for scar endometriosis, with reported sensitivity of 90-92% and specificity of 91-98%.⁷ On T1 and T2-weighted imaging, the masses demonstrate heterogeneous hyperintensity, with focal areas exhibiting contrast enhancement. Recent literature also highlights the increasing role of MRI in preoperative mapping and assessment of lesion extent.⁸

Both medical and surgical options are available for the management of scar endometriosis. Hormonal therapy provided only transient relief, with recurrence of symptoms following discontinuation.³ Despite this, hormonal therapy-including combined oral contraceptives, hormonal suppression with gonadotropin-releasing hormone (GnRH) analogues continues to play a role in both pre-and postoperative management.⁵ Hormonal therapy may serve as an alternative for patients who are unwilling to undergo surgery and can also be employed pre-operatively to reduce the size of large endometriomas. Hormonal therapy can be used postoperatively to decrease the likelihood of recurrence.

Recent surgical literature emphasises that complete excision with adequate margins is regarded as the gold standard and definitive curative treatment.^{3,9} Recurrence occurs in 5-9% of cases; therefore, excision with an additional surgical margin of at least one cm is advisable.^{3,4,9,10} Thorough irrigation and cleaning of the wound before closure- particularly at the margins along the fascia or within the adipose tissue- is essential to reduce the risk of recurrence.³

CONCLUSION

Iatrogenic scar endometriosis is an uncommon complication following caesarean sections, and it ought to be included in the diagnostic hypothesis in a female with a palpable mass near or at a previous caesarean scar and cyclical pain. Diagnosis can be established through careful history-taking- particularly noting the classic triad- combined with clinical, cytological examination, and imaging studies. Hormonal therapy provides only temporary symptomatic relief, whereas surgical excision remains the definitive treatment of choice.

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