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Scar Endometriosis Following Lower Segment Cesarean Section: A Case Report

Abstract
Scar endometriosis is a rare form of extra-pelvic endometriosis that occurs following obstetric and gynecological surgeries, most commonly lower segment cesarean section (LSCS). It usually presents as cyclical pain and swelling near the operative scar, often leading to delayed diagnosis because of its resemblance to other surgical conditions.

We report the case of a 22-year-old female, para one living one, with previous LSCS performed in 2022 for preeclampsia with fetal distress, who presented with painful swelling over the lower anterior abdominal wall near the cesarean scar. Symptoms began approximately 5–6 months after surgery and progressively increased over one year. The swelling increased in size and pain during menstruation and regressed afterward. Ultrasonography and magnetic resonance imaging suggested scar endometriosis involving the right lower rectus region. Surgical excision was performed, and histopathological examination confirmed the diagnosis.

This case emphasizes the importance of considering scar endometriosis in women presenting with cyclical pain and swelling after cesarean delivery. Early diagnosis and surgical excision provide definitive treatment and excellent symptomatic relief.

Keywords: *Scar endometriosis, abdominal wall endometriosis, cesarean scar, extra-pelvic endometriosis, LSCS*

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I. Introduction

Endometriosis is characterized by the presence of functional endometrial glands and stroma outside the uterine cavity. While pelvic endometriosis is relatively common, abdominal wall or scar endometriosis remains uncommon. Scar endometriosis most frequently develops following obstetric or gynecological surgeries, particularly cesarean section, hysterotomy, and hysterectomy.

The incidence of scar endometriosis following cesarean section has been reported to range from 0.03% to 0.4%. The most widely accepted pathophysiological mechanism is direct implantation of viable endometrial tissue into the surgical wound during uterine manipulation. These implanted cells subsequently proliferate under hormonal influence.

Clinically, patients typically present with cyclical pain and swelling near a previous surgical scar. However, due to nonspecific presentation, the condition may be mistaken for stitch granuloma, abscess, lipoma, hematoma, desmoid tumor, or incisional hernia. Imaging modalities such as ultrasonography and magnetic resonance imaging aid in diagnosis, while histopathological examination remains confirmatory.

We present a case of scar endometriosis involving the anterior abdominal wall in a young female following LSCS.

Case Report

A 22-year-old female, para one living one, presented to the gynecology outpatient department with complaints of painful swelling over the lower anterior abdominal wall for one year. She had undergone lower segment cesarean section in 2022 for preeclampsia with fetal distress.

Approximately 5–6 months after surgery, the patient noticed a swelling located around 2–3 cm above the previous LSCS scar and slightly toward the right side of the midline. The swelling gradually increased in size over time. She also experienced cyclical pain associated with menstruation. The swelling became more prominent and painful during menstrual periods and regressed following menstruation.

There was no history of fever, discharge from the scar, bowel complaints, urinary symptoms, or significant weight loss. The patient had no known medical comorbidities.

On examination, a tender swelling measuring approximately 2–3 cm was palpable over the right lower anterior abdominal wall above the previous cesarean scar. The swelling was fixed in consistency with no overlying

skin changes. Cough impulse was absent. Per vaginal examination revealed a normal-sized uterus with bilateral fornices free and non-tender.

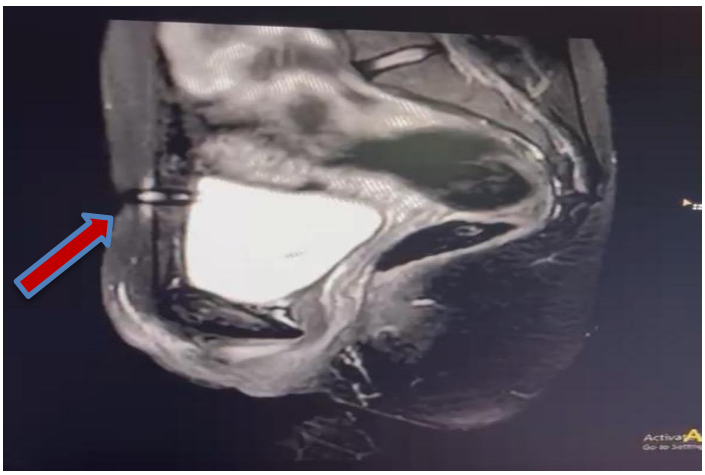
Ultrasonography of the abdomen and pelvis demonstrated a well-defined heterogeneous hypoechoic lesion measuring approximately 2.7 × 1.3 × 2.6 cm within the right lower anterior abdominal wall musculature superior to the LSCS scar. Mild internal vascularity was noted on color Doppler study. Imaging findings were suggestive of scar endometriosis.

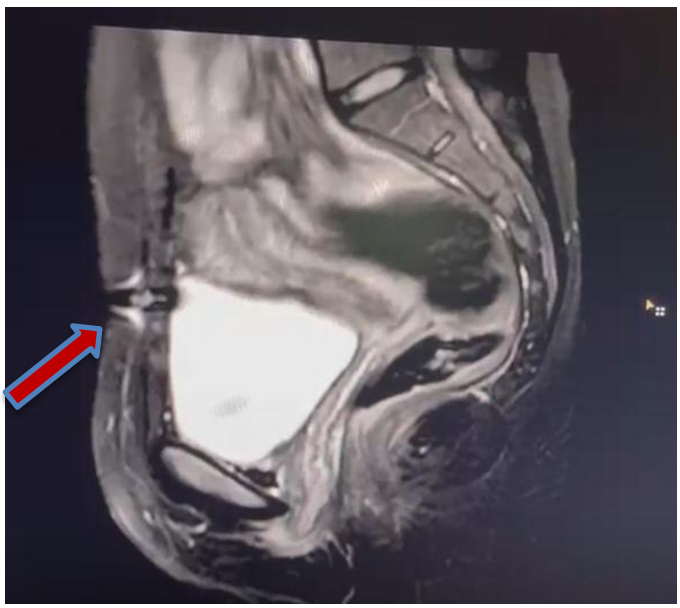
Magnetic resonance imaging of the pelvis revealed a well-defined altered signal intensity lesion measuring approximately 30 × 20 × 18 mm within the right lower rectus muscle at the scar site. The lesion appeared heterogeneously hyperintense on T2-weighted and STIR sequences with heterogeneous post-contrast enhancement. MRI findings were suggestive of scar endometriosis with subtle extension toward the uterine fundus.

The patient underwent surgical excision under spinal anesthesia. Intraoperatively, a localized lesion measuring approximately 3 × 2 × 2 cm was identified about 2–3 cm superior to the previous cesarean scar on the right lower anterior abdominal wall. An elliptical incision was made over the lesion. The lesion extended up to the rectus muscle; however, the rectus sheath and rectus muscle were not infiltrated. Complete excision of the lesion along with overlying skin and surrounding fibrotic tissue was performed. The specimen was sent for histopathological examination.

Histopathological examination showed endometrial glands and stroma embedded within fibromuscular tissue along with hemorrhage and hemosiderin-laden macrophages, confirming the diagnosis of scar endometriosis. No evidence of malignancy was identified.

The postoperative period was uneventful. The patient reported significant relief from pain following surgery and remained asymptomatic on follow-up.





II. Discussion

Scar endometriosis is an uncommon but increasingly recognized entity associated with previous obstetric and gynecological surgeries. Cesarean section is the most common predisposing procedure. The increasing global cesarean section rate has contributed to rising incidence of scar endometriosis.

The pathogenesis is believed to involve iatrogenic transplantation of endometrial cells into the surgical wound during uterine incision and closure. Under estrogenic stimulation, these ectopic endometrial cells proliferate and undergo cyclical bleeding, resulting in inflammation, fibrosis, and pain.

The classical triad of scar endometriosis includes previous pelvic surgery, cyclical pain, and a painful mass near the surgical scar. Our patient exhibited all three features, which strongly suggested the diagnosis clinically.

Ultrasonography is usually the first-line imaging modality and may reveal a heterogeneous hypoechoic lesion with internal vascularity. MRI is particularly useful for evaluating the extent of disease, muscle involvement, and intra-abdominal extension.

The differential diagnosis includes incisional hernia, lipoma, stitch granuloma, abscess, hematoma, neuroma, and desmoid tumor. Histopathological examination demonstrating endometrial glands, stroma, and hemosiderin-laden macrophages remains the gold standard for diagnosis.

Wide local surgical excision with clear margins is considered the definitive treatment for scar endometriosis and is associated with low recurrence rates. Hormonal therapy may temporarily alleviate symptoms but does not eliminate the lesion. Preventive strategies during cesarean section, such as adequate wound irrigation and minimizing contamination with endometrial tissue, may reduce the risk of implantation.

III. Conclusion

Scar endometriosis should be considered in women presenting with cyclical pain and swelling near a previous cesarean scar. A high index of suspicion, combined with appropriate imaging and histopathological confirmation, facilitates early diagnosis and management. Surgical excision remains the treatment of choice and provides excellent symptomatic relief.

Declarations

Patient consent was obtained for publication of clinical details and imaging findings. Efforts have been made to maintain patient confidentiality and anonymity.

Conflict of Interest: None declared.

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