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# Cutaneous Endometriosis: A Case Report and Review of the Literature

Authors' Contribution:  
 Study Design A  
 Data Collection B  
 Statistical Analysis C  
 Data Interpretation D  
 Manuscript Preparation E  
 Literature Search F  
 Funds Collection G

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**Patient:** Female, 39-year-old  
**Final Diagnosis:** Cutaneous endometriosis  
**Symptoms:** Blood mixed fluid from left border of Cesarean scar mass • pain and discoloration around incision line  
**Medication:** —  
**Clinical Procedure:** Excision of the mass  
**Specialty:** Obstetrics and Gynecology

**Objective:** Rare disease

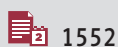
**Background:** Endometriosis is a unique entity described in ample literature as the decidualization of endometrial tissues under the influence of gynecological hormones outside the uterine cavity. The post-surgical presence of ectopic endometrial tissue on the skin is known as abdominal wall endometriosis, cutaneous endometriosis, or scar endometriosis. Iatrogenic implantation of detached endometrial tissues at the incision site is the most widely accepted theory for this rare monad. The unspecific scar endometriosis presentation makes it challenging to diagnose. Moreover, it can easily be confused with hematoma, hernia, lipoma, abscess, scar granuloma, and tumor. Here, we report and discuss a rare case of scar endometriosis with various available treatment modalities.

**Case Report:** We delineate a case of a 39-year-old woman with abdominal wall cutaneous endometriosis. An "inverted T" incision opened the abdominal and uterine cavity as it was a problematic preterm breech in labor. After an uneventful postoperative and postpartum period, she presented with a painful, discolored nodular mass of approximately 3 cm in diameter at the left border of the cesarian scar, developed over 1.5 years, often accompanied by drainage of brownish discharge. Ultrasonography with color Doppler showed a hypoechoic lesion with internal vascularity, corroborated our preliminary diagnosis of scar endometriosis, which was further confirmed by surgical excision and histopathology.

**Conclusions:** A proper surgical resection is the standard treatment line for scar endometriosis. However, patients need regular follow-up to look for recurrences, even after treatment. Further studies are recommended to establish factors associated with cutaneous endometriosis recurrence.

**Keywords:** Abdominal Wall • Endometriosis • Pathology, Surgical

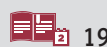
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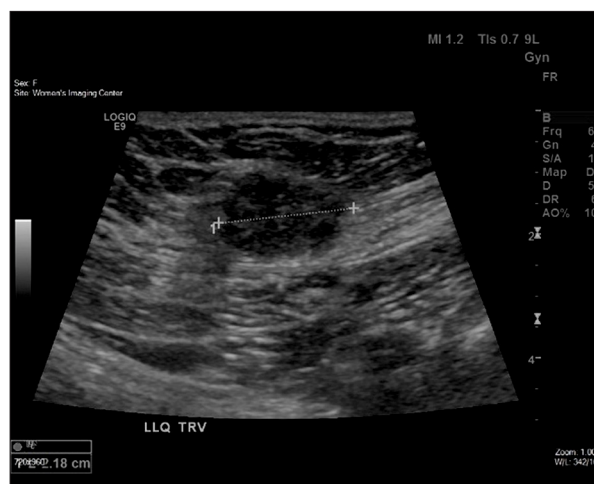


## Background

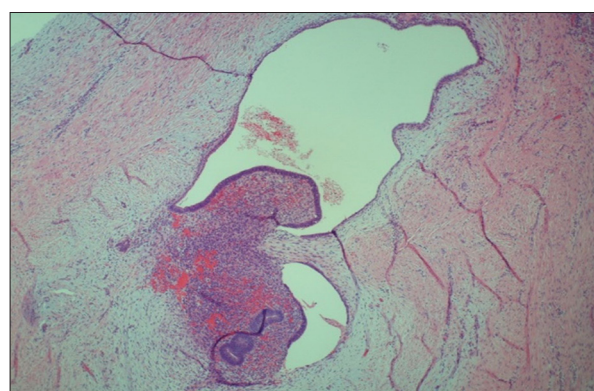
A proliferation of endometrial-like tissues outside of the uterus that bleeds and thickens with each menstrual cycle is acknowledged as endometriosis [1], affecting 10-15% of all potential childbearing women [1,2]. Patients with previous cesarean sections have an enormous impact on the incidence abdominal wall endometriosis. Transplantation and implantation of the endometrium during cesarean delivery are considered to promote scar endometriosis [3]. Cutaneous endometriosis is divided into primary cutaneous endometriosis and secondary cutaneous endometriosis [4]. Spontaneous change in specific tissues under unknown factors is considered the etiology for primary cutaneous endometriosis, with a reported incidence of 0.5-1% [5]. However, iatrogenic factors are responsible for secondary cutaneous endometriosis. The reported incidence of secondary cutaneous endometriosis is about 3.5% in patients who undergo gynecological surgery and about 0.8% in all women with a previous cesarean section [6]. In the gynecological literature, scar endometriosis accounts for 0.03% to 0.15% of all cases of endometriosis [7]. The varied presentation, such as pain, discoloration, and swelling around a Pfannenstiel skin incision, results in a superfluous course of action leading to a deferred diagnosis and exorbitant referrals. We describe a case of cutaneous endometriosis and present a literature review, which may help reduce the emotional and physical distress of patients.

## Case Report

We report the rare case of a 39-year-old woman seen in consultation for a painful lower abdominal nodular mass with skin discolorations at and around the abdominal incision site. She was a healthy-looking woman who underwent an emergency cesarean section 1.5 years ago for preterm pregnancy with breech presentation in active labor. Because of a problematic preterm breech, incision on the skin, and the unformed lower uterine segment, we converted to an “inverted T” incision. After an uneventful hospital stay and unremarkable postpartum follow-up at 6 weeks, she started having pain on the left side of the incision after 4 months of the surgery. She indicated that the severity of pain and tenderness was constant and was 3 out of 10 on the pain scale on most of the days, but doubled around menses and followed a cyclic pattern every month for the previous few months, often accompanied by red-colored fluid coming from the incision site. Physical examination revealed a non-mobile, nodular, moderately pigmented area of approximately 2×3 cm at the incision’s left lateral border. Palpation of the mass exhibited exquisite point tenderness. After ruling out differentials, a preliminary diagnosis of cutaneous endometrioma was considered. It was further substantiated by soft-tissue ultrasound utilizing a linear



**Figure 1.** The transabdominal imaging pelvic ultrasound showing an irregular hypoechoic solid mass of 2×1.3×2.2 cm, partially projecting into the subcutaneous tissues.



**Figure 2.** Hematoxylin and eosin photomicrograph ×20 magnification showed tissue surrounding benign endometrial glands and stroma consistent with endometriosis, showing hemorrhage at the center of the cystic space.

high-frequency transducer with color Doppler evaluation. A 2×1.3×2.2 cm irregular hypoechoic solid mass partially projecting into subcutaneous tissues, with internal vascularity noticed in the area of palpable concern (**Figure 1**).

We planned to explore and resect the abdominal mass to confirm cutaneous endometriosis. Extensive fibrosis of abdominal tissue around the scar was noticed, which was excised entirely, including the nodular portion for histopathological examination. The final histopathology report revealed “endometriosis involving fibro-adipose tissue with dense fibrous scarring” (**Figure 2**). Molecular biology studies showed that increased expression of estrogen receptors, increase in local growth factors, and staining with anti-CD 10 (classification determinant 10) can better demonstrate cutaneous endometriosis in the proliferative phase. In our case, we did not perform

because of its confirmed histopathological findings and cost-effectiveness. The patient is in follow-up, and the stitch line has healed without any recurrence.

## Discussion

Endometriosis is a chronic pathology characterized by the presence of endometrial tissue outside the uterus. The most common implantation site is in the ovaries or tubes, but it can be located throughout the body. Endometriotic implants located in the skin are known as “cutaneous endometriosis.” Within this type, we distinguish primary cutaneous endometriosis without a history and secondary cutaneous endometriosis, which occurs after surgical operations. Since it is usually located in the scars of these interventions, it is also known as scar endometriosis.

The most common presentation of cutaneous endometriosis is a triad of non-malignant abdominal mass, recurring pain with menses, and previous history of abdominal surgery. The degree of pain and dimensions of scar endometriosis vary with the menstrual cycle [8]. The average reported duration between cesarean section surgery and the onset of symptoms is 3.7-4.5 years.

Established risk factors for abdominal wall endometriosis are low body mass index, nulliparity, early menarche, late menopause, and the presence of endometriosis in a first-degree relative. Khan et al [9] demonstrated that patients with abdominal wall endometriosis who had higher parity and body mass index tended to present with more cyclic pain than controls. However, our case was para 2 with an average body mass index. The pathogenesis of cutaneous endometriosis may be explained by the metaplasia theory, embryonic rest theory, or transport theory. Our case also suggested iatrogenic implantation of endometrial tissue that escaped through an emergency cesarean incision and seeded into the edge of the corresponding abdominal wall. Careful history taking and a diligent examination supported by conventional imaging are pivotal for preoperative diagnosis. However, only after excision, the concluding diagnosis is begotten. In our case, clinical presentation and experience confirmed the preliminary diagnosis.

A spectrum of differentials, such as infections at the scar site, abscess, stitch granuloma, keloid, hematoma, desmoid tumor, lymphadenopathy, and benign (neuroma) and malignant growths (melanoma), culminate in a high rate of misdiagnosis, leading to unnecessary procedures with increased distress among patients.

Most non-invasive diagnostic methods performed, such as ultrasound with or without color Doppler, computed tomography

scan, and magnetic resonance imaging, may help in the divergent diagnosis but are often inconclusive. Ultrasound and computed tomography are indeterminate for the nature of the lesion. Moreover, contrast computed tomography and magnetic resonance imaging can discern hemorrhagic signals. High spatial resolution magnetic resonance imaging can be more helpful in localizing small endometriotic spots and better differentiate between planes of muscles and abdominal subcutaneous tissue [10]. Some authors described dermoscopy as a valuable, non-invasive, and economical emerging tool for diagnosing cutaneous endometriosis. It describes a homogeneously red-pigmented area containing small red globular structures corresponding to irregular endometriotic glands using epiluminescence microscopy [11].

Fine-needle aspiration cytology is a valuable invasive diagnostic tool. Ultrasound-guided fine-needle biopsy is a valuable and economical technique, as assessed by Medeiros et al [12]. However, fine-needle aspiration in the diagnosis of scar endometriosis is controversial, as this may cause nucleation of the endometriotic tissue in new areas, further aggravating the condition [13].

The use of progestogens, oral contraceptive pills, and danazol provides partial relief of symptoms. Gonadotropin agonists provide fast pain relief but do not alter the disease [14]. Recurrence is often noticed in patients on hormonal treatment, requiring close follow-up and excision in case of failure. The reported postoperative recurrence rate is reported to be 1.5-9.1% [15]. Malignancy should be suspected in case of incessant cutaneous endometriosis. However, the details of malignant transfiguration of benign cutaneous endometriosis are unclear. The causes of malignant transformation of endometriosis are also unclear, but they appear to involve genetic, immunologic, and hormonal factors.

Cryoablation, intra-lesion alcohol injection, or wide local excision of the lesion were found to be helpful in some cases [16,17]. However, for diagnostic as well as curative purposes, surgical excision remains the most effective treatment for cutaneous endometriosis. Excision should include standard tissue 1 cm away from the solid endometriotic tissue and may require the use of a polypropylene mesh to prevent incisional hernia. The recurrence rate is low in patient who undergo surgical excision of the lesion. In a study conducted by Lopez-Soto et al [18], out of 33 women who underwent cutaneous endometriosis treatment, only 3 (9%) had a recurrence. Our patient is in follow-up, and no recurrence has been reported to date for the previous 5 months.

With an increase in the cesarean section rate, cases of cutaneous endometriosis could be prevented by following simple measures. When dry or wet, swabs are used to clean during or after a cesarean section; quick removal of these swabs

from the operation site is suggested to prevent inoculation of the endometriotic tissue. Many obstetricians prefer abdominal compresses as a physical barrier between the subcutaneous tissue and the skin to protect the surgical margins from the excavated uterine cavity. Moreover, some surgeons avoid reusing surgical tools used earlier during the operative procedure, such as needle holders and forceps, and suture materials, while closing abdominal wall layers. Many preferred to irrigate the incisional site vigorously with a high saline jet before the abdominal closure to ensure clearing all dead space in the subcutaneous area [19].

## Conclusions

The diagnosis of cutaneous endometriosis can be made with ultrasound, medical history, or examination, but the definitive diagnosis is by pathology. Surgical removal of the exogenous endometriotic tissue is a prompt treatment that can improve quality of life. The increased cesarean section rate has amplified the chances of finding cutaneous endometriosis. Therefore,

education to raise awareness among obstetricians is required to prevent cutaneous endometriosis.

## Department and Institution Where Work Was Done

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## Declaration of Figures Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

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