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# Hidden in the Scar: A Rare Case of Episiotomy Scar Endometriosis

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## ABSTRACT

Episiotomy scar endometriosis is a rare clinical condition characterized by the presence of functional endometrial tissue within a scar, often presenting as cyclical pain and swelling. This report details a case of a 29-year-old woman with a two-year history of cyclic perineal pain and swelling, linked to a tender nodule at the distal end of a prior episiotomy scar. Despite prior medical therapy, the symptoms persisted. Imaging confirmed a multiloculated lesion consistent with a soft tissue mass, and surgical excision was performed. Histopathological analysis revealed endometrial glands and stroma with hemosiderin-laden macrophages, confirming the diagnosis. Postoperative follow-up showed complete symptom resolution, emphasizing the effectiveness of surgical excision. This case highlights the diagnostic challenges of scar endometriosis due to its nonspecific symptoms, with imaging and histopathology playing key roles in confirmation. The report reviews pathophysiology, diagnosis, and management strategies, showing the need for heightened clinical suspicion, especially in patients with prior obstetric procedures. Additionally, it contributes to the sparse literature on extrapelvic endometriosis, illustrating the importance of early recognition and definitive management to prevent recurrence and improve patient outcomes. Regular follow-up remains essential to ensure long-term success and monitor for potential complications.

## 1. INTRODUCTION

Endometriosis is a chronic gynecological condition characterized by the presence of functional endometrial tissue outside the uterine cavity, affecting approximately 10% of women of reproductive age [1]. While the disease typically manifests in the pelvic organs, extrapelvic endometriosis remains a rare but significant diagnostic challenge. Among the atypical presentations, scar endometriosis, particularly in episiotomy scars, is an uncommon entity, with reported incidence rates ranging from 0.03% to 1.7% in women with a history of obstetric or gynecological surgery [2]. Its rarity, coupled with non-specific clinical symptoms, often leads to delayed diagnosis and inappropriate management. This case report details a rare presentation of endometriosis arising in an episiotomy scar, a site seldom associated with the condition. Highlighting the pathophysiological mechanisms, diagnostic challenges, and therapeutic approach, this case explains the importance of heightened clinical suspicion for effective management of this rare condition.

Scar endometriosis typically arises following obstetric or surgical procedures, where endometrial cells are inadvertently implanted into the incision site, potentially during delivery or uterine manipulation. Episiotomy scars, due to their proximity to the uterus and endometrial shedding during childbirth, represent a plausible but under-recognized site for this pathological process [3]. Once implanted, these ectopic cells proliferate under the influence of cyclical hormonal changes, mimicking the functional behavior of eutopic endometrium and causing symptoms such as cyclical pain, palpable mass, and, in rare instances, bleeding. The diagnosis of episiotomy scar endometriosis is often challenging due to its nonspecific symptoms and overlap with other conditions such as abscesses, lipomas, or hernias. Imaging modalities such as ultrasound and magnetic resonance imaging (MRI) play a critical role, but definitive diagnosis is contingent upon histopathological examination [4]. Surgical excision remains the gold standard for both diagnosis and treatment, with medical therapy offering limited efficacy in isolated scar lesions.

This case contributes to the sparse literature on episiotomy scar endometriosis, providing insights into its clinical presentation, pathogenesis, and management strategies. It highlights the need for awareness among clinicians to ensure timely recognition and intervention, ultimately improving patient outcomes.

## 2. CASE DETAILS

A 29-year-old woman presented with a two-year history of pain and swelling in the perineal region. The pain was cyclic, worsening during her menstrual periods. She had two children, both delivered via normal vaginal deliveries, and had undergone a left mediolateral episiotomy three years prior. Following her second delivery, postpartum sterilization was performed. Her medical and surgical history was otherwise unremarkable, and she did not report systemic symptoms such as fever, weight loss, or loss of appetite. Additionally, she denied experiencing dyspareunia or any urinary or bowel complaints.

### Clinical Examination

On examination, a tender nodule measuring 4 × 3 cm was identified at the distal end of the episiotomy scar. The skin overlying the nodule was inflamed, but no lymphadenopathy was noted. Abdominal, per-speculum, and vaginal examinations revealed no abnormalities.

### Initial Diagnosis and Imaging

Given the patient's history of surgery and cyclic pain, episiotomy scar endometriosis was strongly suspected. An ultrasound of the perineum identified a 4 × 2 cm multiloculated lesion without internal vascularity, consistent with a soft tissue mass. As the patient had previously undergone unsuccessful medical treatment for a year, surgical management was considered the next step.

### Surgical Management and Histopathology

The mass was excised with a wide margin of 1 cm, and the specimen was sent for histopathological analysis.

- **Gross Examination**: The excised tissue measured 5 × 4.5 × 2.3 cm and appeared as fibrofatty tissue with regions of fibrosis and hemorrhage.
- **Microscopy**: Histological examination revealed endometrial glands and stroma within fibrocollagenous and adipose tissue. Hemosiderin-laden macrophages, indicative of old hemorrhage, were also observed. The epidermis overlying the lesion was normal, and there was no evidence of malignancy.

### Postoperative Outcome

The patient recovered well following surgery and reported complete relief from her symptoms during follow-up visits. No recurrence of pain or swelling was noted, and she continues to remain asymptomatic with regular follow-up care.

## 3. DISCUSSION

Endometriosis is a chronic condition characterized by the ectopic presence of endometrial glands and stroma, commonly occurring in the pelvic cavity but occasionally presenting in extrapelvic sites, including surgical scars. Scar endometriosis, particularly in episiotomy scars, is a rare manifestation, accounting for 0.03–1.7% of cases of endometriosis [2,4]. This case highlights the importance of recognizing episiotomy scar endometriosis as a potential cause of cyclical pain and swelling in women with a history of vaginal delivery and episiotomy.

The pathogenesis of scar endometriosis is widely believed to involve the implantation theory. During obstetric or gynecological surgeries, endometrial cells from the uterine cavity can be transplanted to the surgical site. In the context of episiotomy scars, endometrial cells may gain access to the perineal tissues during vaginal delivery, especially in the presence of perineal trauma [5]. Hormonal influences during the menstrual cycle stimulate the growth and shedding of these ectopic cells, leading to localized pain, swelling, and inflammation [6]. This is consistent with the clinical findings in the present case, where the patient reported cyclical pain corresponding to her menstrual periods.

The clinical presentation of scar endometriosis varies and is often nonspecific, making it a diagnostic challenge. Common symptoms include a palpable mass, localized pain, and swelling, which are often mistaken for abscesses, granulomas, or neoplasms [7]. In this case, the presence of a tender nodule in the perineal region with a history of episiotomy and cyclical pain led to a high index of suspicion for scar endometriosis. The absence of systemic symptoms such as fever or weight loss helped exclude infectious or malignant conditions.

Imaging plays a crucial role in supporting the diagnosis of scar endometriosis. Ultrasound, as used in this case, is often the first-line imaging modality. It typically reveals a hypoechoic or heterogeneous lesion, sometimes with cystic areas, and helps delineate the size and extent of the lesion [8]. MRI, although not performed in this case, is another valuable tool for assessing the extent of disease and its relation to adjacent structures, especially in complex or recurrent cases [9].

Surgical excision remains the gold standard for both diagnosis and treatment of scar endometriosis. Complete excision with clear margins is crucial to prevent recurrence, as incomplete removal of ectopic tissue can lead to persistent or recurrent symptoms [10]. In this case, wide excision with 1 cm margins was performed successfully, and histopathological examination confirmed the diagnosis of endometriosis with no evidence of malignancy. The presence of hemosiderin-laden macrophages and endometrial glands within fibrofatty tissue corroborated the chronicity and cyclical nature of the condition.

Histopathology remains the definitive diagnostic tool. The identification of endometrial glands and stroma within fibrous or adipose tissue, along with hemosiderin deposition, is characteristic of endometriosis [11]. Additionally, the absence of malignant changes is an important finding, as malignant transformation, though exceedingly rare, has been reported in long-standing cases of endometriosis [12].

Postoperative outcomes for scar endometriosis are generally favorable when complete excision is achieved. In this case, the patient experienced complete symptom relief, with no recurrence noted during follow-up. Regular follow-up is essential, particularly in cases where incomplete excision or recurrence risk factors are identified [13].

**Perineal Scar Endometriosis Post Forceps Vaginal Delivery:** A 36-year-old woman developed a painful perineal mass at the site of a previous episiotomy scar five years after a forceps-assisted vaginal delivery. The mass exhibited cyclical pain correlating with menstrual periods. Ultrasound imaging revealed a hypoechoic lesion adjacent to the episiotomy scar. Surgical excision was performed, and histopathological analysis confirmed endometriosis. The patient remained symptom-free during follow-up, revealing the importance of considering scar endometriosis in patients with a history of obstetric procedures and cyclical perineal pain [14].

**Malignant Transformation of Perineal Endometriosis in an Episiotomy Scar:** A 54-year-old woman developed a large perineal lesion at the site of a previous episiotomy scar, decades after the initial procedure. The lesion was associated with high 18F-fluorodeoxyglucose uptake on positron emission tomography, raising suspicion for malignancy. Histopathological examination following surgical excision revealed clear cell carcinoma arising from endometriosis. This case reveals the rare potential for malignant transformation in long-standing endometriotic lesions and the importance of thorough evaluation of atypical presentations [15].

**Episiotomy Scar Endometriosis Presenting as a Perianal Mass:** A 35-year-old woman reported a painful perianal mass near the episiotomy scar, with symptoms intensifying during menstruation. Physical examination revealed a firm, tender nodule. Ultrasound and MRI indicated a lesion suggestive of endometriosis. Surgical excision was performed, and histopathology confirmed the diagnosis. The patient experienced complete symptom resolution postoperatively. This case emphasizes the role of imaging in diagnosis and the effectiveness of surgical management [16].

This case emphasizes the need for awareness among clinicians about scar endometriosis, particularly in women presenting with cyclical symptoms and a history of obstetric or gynecological surgery. Early recognition and definitive surgical management are critical to improving patient outcomes and quality of life.

## 4. CONCLUSION

Episiotomy scar endometriosis is a rare but significant clinical entity that underlines the importance of considering endometriosis in patients presenting with cyclical perineal pain and swelling, especially with a history of obstetric procedures such as episiotomy. This case highlights the diagnostic challenges associated with this condition due to its nonspecific symptoms and rare presentation. Imaging modalities such as ultrasound and MRI can aid in diagnosis, but definitive confirmation relies on histopathological examination. Timely surgical excision with clear margins is critical for effective management, providing both diagnostic and therapeutic benefits. This case report emphasizes the necessity for heightened clinical suspicion and multidisciplinary approaches in managing such cases to ensure prompt diagnosis, symptom relief, and prevention of recurrence. Regular follow-up remains essential for monitoring and maintaining long-term patient outcomes.

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