

Abdominal Wall Scar Endometriosis Post Cesarean Section: A Case Report

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ABSTRACT: Endometriosis is the condition where functioning endometrial stromal and glandular tissue is present outside of the uterine cavity it is referred as endometriosis. Endometriosis affects 6–15% of reproductive-aged women, with abdominal wall endometriosis occurring in 1–12% of extra pelvic cases. Cesarean scar endometriosis, the most common abdominal wall endometriosis subtype, arises in 0.03–3.5% of post-cesarean patients, often presenting as cyclical pain or a palpable mass near surgical scars. The patient presents with non-specific symptoms such as cyclical abdominal pain near the site of a previous surgical scar and an abdominal lump with a cyclical increment in size, which is tender. Surgical excision was planned with the corresponding clinical features and USG data. After the surgical excision, the sample was sent for histopathological examination, and scar endometriosis was confirmed.

Key Words : Scar Endometriosis, Abdominal Wall, Cesarean Section.

1. INTRODUCTION

Endometriosis is the condition where functioning endometrial stromal and glandular tissue is present outside of the uterine cavity it is referred as endometriosis. Clinical presentation of endometriosis is mainly due to presence of ectopic endometrial tissue involving pelvic organs and tissues. This pathologic condition is mostly encountered in ligaments of uterus, ovaries, pouch of douglas, and pelvic peritoneum but endometriosis has also been reported in extra pelvic sites as nose, breast, lung, spleen, gastro-intestinal tract, kidney, and abdominal wall.¹

Abdominal wall endometriosis (AWE), as ectopic endometrial tissue localized between the parietal peritoneum and skin, most commonly arises in or adjacent to surgical scars. Abdominal wall endometriosis occurred in 1–12% of extra pelvic cases. Most common subtype of Cesarean scar endometriosis is the abdominal wall endometriosis which arises in 0.03–3.5% of post-cesarean patients.²

2. CAUSES

The etiology of scar endometriosis remains a subject of ongoing research and debate. However, several theories have been stated to explain its development:

Iatrogenic Transplantation: This is the widely accepted theory which suggests that during surgical procedures, endometriosis cells inadvertently become implanted within the surgical incision or scar tissue. This phenomenon is particularly common in obstetric and gynecological surgeries, such as cesarean sections, hysterectomies, and laparoscopic procedures.

Lymphatic or Vascular Dissemination: Similar to other forms of endometriosis found in the body, these cells may travel through lymphatic or vascular channels, eventually seeding and proliferating within surgical scars or distant sites.

Metaplastic Transformation: This theory proposes that specialized cells within the surgical scar undergo metaplastic changes, transforming into endometrial-like cells under the influence of specific hormonal or environmental factors.

While these theories provide plausible explanations, the exact mechanisms underlying scar endometriosis remain elusive, so there is need for further research to unravel the complexities of this condition.

Timeline: Symptoms may appear anywhere from a few months to up to 10 years after the previous pelvic surgery.^{1, 3}

3. SYMPTOMS

The clinical manifestations of scar endometriosis can vary, making early recognition challenging. However, certain symptoms may raise suspicion and prompt further investigation:

Cyclical Pain: One of the hallmark symptoms is cyclical pain or discomfort at the surgical scar site, often coinciding with menstrual periods. This pain can range from mild to severe and may radiate to adjacent areas.

Swelling or Lump: Many people with scar endometriosis report the presence of a palpable lump or swelling at the scar site. This lump may fluctuate in size and tenderness throughout the menstrual cycle.

Cyclical Bleeding: In some cases, patients may experience cyclical bleeding or discharge from the surgical scar, further indicating the presence of endometriosis.

Dysmenorrhea and Pelvic Pain: Scar endometriosis can coexist with pelvic endometriosis, leading to additional symptoms such as dysmenorrhea (painful periods) and chronic pelvic pain especially if endometriosis has been left untreated.

It is crucial to note that the absence of cyclical symptoms does not necessarily exclude the possibility of scar endometriosis, as some cases may present with non-cyclical pain or discomfort.^{3,4}

4. DIAGNOSTIC EVALUATION

Diagnosing scar endometriosis can be challenging due to its non-specific symptoms and the need for a multidisciplinary approach.

The diagnostic process typically involves the following steps:

Medical History and Physical Examination: A thorough medical history, including details of previous surgeries, menstrual patterns, and associated symptoms, is essential. During the physical examination, healthcare professionals may palpate the surgical scar site for any palpable masses, nodules, or tenderness.

Imaging Modalities: Various imaging techniques can aid in the diagnosis and assessment of scar endometriosis:

Ultrasonography: Ultrasound is often the initial imaging modality employed, as it can detect hypoechoic or heterogeneous lesions with irregular borders at the scar site. **Magnetic Resonance Imaging (MRI):** MRI provides detailed information about the extent and depth of the lesion, aiding in surgical planning. **Computed Tomography (CT) Scan:** This is the less commonly used, can help differentiate scar endometriosis from other conditions, such as hernias or malignancies.

Biopsy and Histopathological Examination: Ultimately, a definitive diagnosis requires a biopsy or surgical excision of the lesion, followed by histopathological examination. The presence of endometrial glands and stroma within the scar tissue confirms the diagnosis of scar endometriosis.

It is essential to note that a multidisciplinary team including gynecologists, radiologists, and pathologists may be necessary to establish an accurate diagnosis and develop an appropriate treatment plan.^{3,5}

5. MANAGEMENT AND TREATMENT

The management of scar endometriosis aims to alleviate symptoms, prevent recurrence, and preserve fertility when desired. The treatment approach is multifaceted and tailored to each individual's unique circumstances:

Surgical Intervention: Wide surgical excision with clear margins is the ideal treatment for scar endometriosis. This procedure involves the complete removal of the endometriosis lesion, including any affected surrounding tissue or muscle layers. In cases of extensive involvement, abdominal wall reconstruction with mesh reinforcement may be recommended.

Hormonal Therapy: While not a definitive treatment, hormonal therapies such as oral contraceptives, progestins, or gonadotropin-releasing hormone (GnRH) agonists can provide temporary symptom relief, and some research shows that these therapies may suppress the growth of lesions. However, these medications may have side effects and do not address the underlying lesion.⁷

Combined Approach: In some cases, a combined approach involving surgical excision followed by adjuvant hormonal therapy may be recommended and may reduce the risk of recurrence.

Pain Management: Effective pain management strategies, including the use of non-steroidal anti-inflammatory drugs (NSAIDs) or other analgesics, may be necessary to alleviate discomfort associated with scar endometriosis.

It is crucial to engage in shared decision-making with healthcare professionals, weighing the risks and benefits of each treatment option to determine the most appropriate course of action.^{5,6,7}

6. COMPLICATIONS

Local and Physical Complications

Severe Cyclical Pain: During the menstrual cycle, the trapped endometrial tissue bleeds, resulting in severe, throbbing, or cramping pain at the scar site. **Progressive Nodule Growth:** The lesion can grow in size over time, infiltrating deeper tissue layers like the abdominal muscles and the rectus sheath. **Disfigurement and Skin Changes:** The mass may cause localized blue-to-black discoloration, elevate the skin, or result in hyper-pigmentation. It may also result in recurrent bleeding or ulceration in superficial lesions. **Abdominal Wall Hernia:** The continuous growth and infiltration of tissue into the fascia and muscles weaken the abdominal wall, increasing the risk of incisional hernias

Systemic and Associated Complications

Concomitant Pelvic Endometriosis: Up to 26% of patients with scar endometriosis also have concurrent pelvic endometriosis. This can lead to broader complications such as severe dysmenorrhea, painful intercourse, and infertility. **Delayed Diagnosis and Misdiagnosis:** The condition is frequently mistaken for other issues such as stitch granulomas, abscesses, lipomas, or incisional hernias. This misdiagnosis leads to unnecessary treatments and prolonged physical distress. **Impact on Mental Health:** Because the intense pain is cyclical and often goes undiagnosed for years, it can severely impact quality of life and cause significant emotional distress

Rare, Severe Complications

Malignant Transformation: Though very rare (occurring in less than 1% of cases), there is a risk of the ectopic endometrial tissue undergoing malignant transformation into types of cancer (e.g., clear cell carcinoma).^{4, 8, 9}

7. CASE PRESENTATION

A 33 years old female presented to XYZ hospital a 2-year history of a growing mass in the her right lower abdominal wall just 3cm above to her Pfannenstiel scar from a cesarean section performed 3 years prior. The mass became increasingly tender during menstruation, prompting evaluation. She reported cyclic pain that occurred 1-2 days prior menstruation, during menstruation and last about 3-4 days after menstruation. There is no history of prior symptoms of endometriosis, mental health conditions, or relevant family history. Psychosocial assessment revealed no financial, cultural, or linguistic barriers to care.

On physical examination, a firm, non-reducible 1.5 cm X 1.0cm mass was palpated at the right side lower abdominal wall, the scar without skin discoloration, fluctuation, or size changes during coughing. There were no signs of acute inflammation or herniation of abdominal contents.

Initial ultrasound revealed a fairly well defined small mass showing heterogeneous echotexture is located superficially in the lower abdominal wall at the site of previous surgical incision slightly to the right of midline. It is measured about 15mm X 10mm in size.

Based on the history, clinical, and USG findings, diagnosis of scar endometriosis was made and local wide scar excision was planned. Intraoperative, there was 1.5 cm × 1.0 cm mass densely adherent to the rectus sheath and linea alba which was excised with a clear margin. Histopathological examination (HPE) of excised tissue revealed fibromuscular tissue and endometrial glands with endometrial stroma. No evidence of defined granuloma formation or any malignancy noted.

Further patient was under injection leuprolide Acetate 3.75 mg monthly for 3 months. Follow-up visits at 2nd and 3rd months revealed the patient to be asymptomatic with well-healed scar.

The recurrence can be prevented by excising the lesion along with histologically proven, surgical-free margin of 1 cm.



Figure 1



Figure 2

Figure1 - Excised Mass from the abdominal wall.¹⁰

Figure 2 – Cross Section of Mass Showing Stroma of Endometrial Cell.¹⁰

8. CONCLUSION

Scar endometriosis is an uncommon clinical phenomenon that can be difficult to diagnose since it frequently mimics other clinical diseases. The diagnosis of this disorder is aided by a high index of suspicion in women of reproductive age who have localized cyclical symptoms in a scar after a prior obstetric or gynaecological operation. A good surgical technique and due precautions like thorough saline wash of the wound should be exercised during surgery to avoid endometrial implantation in anterior abdominal wall. This could otherwise result in scar endometriosis and the morbidity that goes along with it. So Early diagnosis and intervention are paramount to prevent complications, including malignancy, and to improve quality of life.

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