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Cesarean Scar Endometriosis Mimicking Suture Granuloma: A Rare Case Report

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Abstract: ***Introduction: Scar endometriosis is an uncommon form of extra-pelvic endometriosis that occurs when endometrial tissue develops within or near a surgical scar, most often following cesarean section. Due to its nonspecific presentation, it is frequently misdiagnosed. Case Report: A 30-year-old woman presented with pain and swelling at the site of a previous cesarean section scar. The pain showed cyclical variation with menstruation. Clinical examination revealed a firm, tender, non-mobile mass. Ultrasonography suggested a hypoechoic lesion with internal vascularity, initially raising suspicion of a benign condition such as suture granuloma. The mass was surgically excised and examined histologically, which confirmed the presence of endometrial glands and stroma consistent with scar endometriosis. Discussion: The patient underwent complete surgical excision of the lesion along with surrounding tissue. Recovery was uneventful, and no recurrence was noted on follow-up. Surgical removal remains the definitive treatment, as medical therapy offers only temporary symptom relief. Conclusion: Scar endometriosis should be considered in women presenting with a a surgical scar, especially with cyclical symptoms. Early diagnosis and complete excision are essential for effective management. Increased awareness and careful surgical techniques may help reduce its occurrence.***

Keywords: Scar endometriosis; cesarean section; surgical scar; cyclical pain; surgical excision

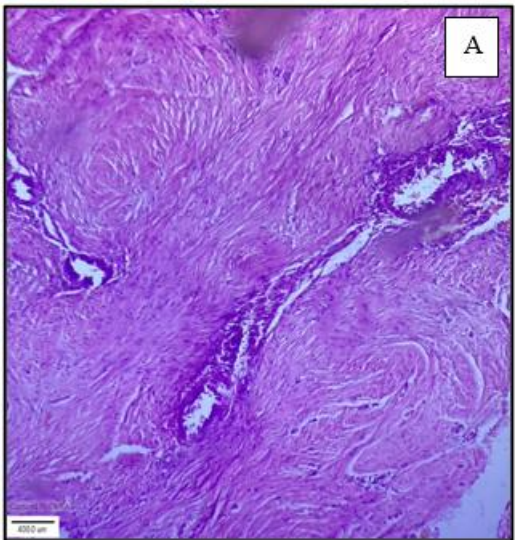
1. Introduction

Endometriosis is a chronic, oestrogen-dependent inflammatory condition defined by the presence of endometrial glands and stroma outside the uterine cavity. It usually affects pelvic organs such as the ovaries and surrounding structures, but in rare cases, ectopic endometrial tissue can occasionally be found in extra pelvic locations. One such uncommon but clinically significant site is the abdominal wall, particularly in surgical scars—a condition referred to as Scar Endometriosis (SE).[1,2]

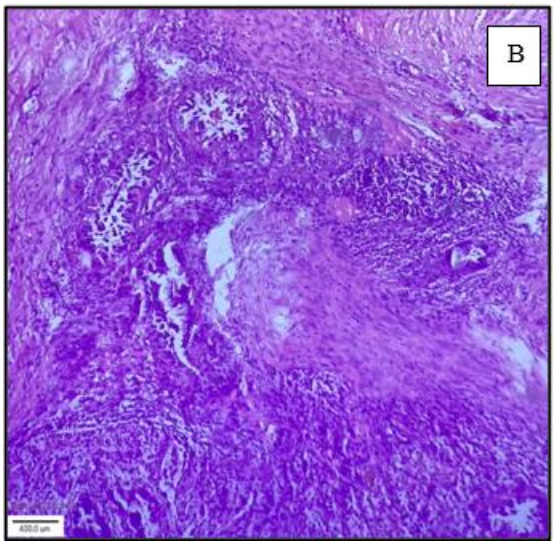
Scar endometriosis, sometimes termed abdominal wall endometriosis (AWE) when occurring in surgical scars, is typically seen following obstetric and gynaecologic surgeries, notably cesarean sections. It represents about 0.03% to 1.5% of all endometriosis cases, but due to diagnostic challenges, its true incidence may be underreported. Patients commonly presents with cyclical pain and swelling in or near surgical scars, yet due to its rarity and nonspecific symptoms, its diagnosis can be challenging and may be misdiagnosed as hernia, granuloma, or neoplastic lesions.[3,4]

2. Case Report

A 30 year old female presented with complaint of pain and swelling in lumber region. Patient had a history of lower segment cesarean section 2 years ago. On examination, a non-mobile tender indurated swelling 3 cm in size was present on incision scar. Clinical diagnosis of suture granuloma was given. Ultrasonography showed hypoechoic mass with internal vascularity. The mass was excised alongwith the indurated fibrous tissue and specimen was sent for histopathology. Grossly, specimen had irregular outer surface and on cut section, homogenous white area with some haemorrhagic areas were identified. Microscopy showed fibroconnective tissue with endometrial glands, endometrial stroma and haemorrhage and consistent with diagnosis of scar endometriosis.



Photomicrograph A: shows endometrial glands in fibroconnective tissue (H & E, 100x)



Photomicrograph B: shows endometrial glands and stroma surrounded by fibrous tissue (H & E, 100x)

3. Discussion

Scar endometriosis is an uncommon yet clinically significant form of extrapelvic endometriosis that typically develops following gynaecological or obstetric surgeries, most notably cesarean sections. The leading explanation for its development is the iatrogenic implantation theory, which suggests that viable endometrial cells are accidentally transferred to the incision site during procedures involving the uterus. This risk is often heightened when surgical safeguards, such as thorough irrigation or the use of specialized instruments, are overlooked. Once these ectopic cells embed themselves in the abdominal wall, they remain sensitive to the body's hormonal shifts. Under the cyclical influence of estrogen and progesterone, the tissue grows and bleeds, triggering a local inflammatory response that eventually results in a painful, fibrotic mass. While other theories exist such as coelomic metaplasia, where cells spontaneously transform into endometrial tissue, or lymphatic and hematogenous spread, which accounts for rare cases in the lungs or brain- direct surgical implantation remains the most recognized cause for endometriosis occurring within surgical scars. [5,6,7]

A number of risk factors are responsible for the development of scar endometriosis in women, the most prevalent being previous cesarean section. Other risk factors include previous gynaecologic operations such as myomectomy or hysterectomy, lack of careful surgical technique (such as neglect to debride the wound before closure), multiple operations in the same location, and impaired wound healing. Unlike the overall trend with endometriosis, nulliparity provides no protection where there is scar involvement.[8]

Scar endometriosis clinically presents as a hard, fixed nodule or mass at or near a surgical incision, with pain that is frequently cyclical, becoming exacerbated during menses. The lesion can become inflamed, change colour and, if superficial, even ulcerate or drain in some instances. Diagnosis is initiated by a thorough clinical history with a focus on the temporal correlation of symptoms with the menstrual cycle and previous surgical history. Physical examination demonstrates a painful subcutaneous mass in proximity to the wound.[9,10]

Imaging is crucial to assessment, and ultrasound is often the initial modality utilized; it characteristically demonstrates a hypoechoic mass with internal vascularity. MRI offers excellent contrast of soft tissues and is especially useful in outlining lesion margins, determining depth of invasion into muscles, and preoperative planning for excision. FNAC can be utilized, but at the risk of disseminating endometrial cells and sometimes providing inconclusive material. Finally, histopathological confirmation is the gold standard, involving detection of both endometrial glands and stromal elements within the lesion. The differential for scar endometriosis is extensive and consists of suture granuloma, desmoid tumor, lipoma, incisional hernia, abscess, and neoplasms like soft tissue sarcomas. In our case, clinical diagnosis of suture granuloma was given but on microscopy diagnosis of scar endometriosis was given. [3,11]

Medical management with hormonal agents such as GnRH analogues, oral contraceptives, or danazol may temporarily relieve symptoms by inhibiting hormonal stimulation, recurrence follows cessation but it does not cure the condition. Surgical excision remains the definitive treatment. With total surgical excision, the prognosis is excellent and recurrence rates are low estimated at approximately 4% although they increase greatly with incomplete resection. Rarely, there have been cases where such lesions turn cancerous like clear cell carcinoma, highlighting the importance of early diagnosis and complete excision.[12,13]

4. Conclusion

Scar endometriosis is an important but often overlooked cause of postoperative abdominal wall masses, especially in women with a history of cesarean delivery. Given the rising cesarean section rates globally, awareness of this condition is critical for timely diagnosis and management. Therefore, clinically recognizing the hallmark triad surgical scar, cyclical pain and a palpable mass can significantly may help in early diagnosis and management followed by confirmation by histopathological examination during surgeries to avoid scar endometriosis. Prophylactic measures should be taken by surgeons, total surgical excision is definite treatment.

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