

Scar Endometriosis: A Rare Cause of Painful Abdominal Wall Mass - A Retrospective Case Series from a Tertiary Care Hospital

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Conflict of interest: Nil

Abstract

Background: Scar endometriosis is an infrequent presentation of extra-pelvic endometriosis, defined by the implantation of functional endometrial tissue within surgical scars, typically subsequent to obstetric or gynecologic interventions. It usually shows up as a painful mass on the abdomen wall that gets worse and worse with each menstrual cycle. Because it is rare and doesn't show any clear signs, it is sometimes misinterpreted as a hernia, suture granuloma, lipoma, or abscess.

Objectives: To assess the clinical profile, diagnostic difficulties, imaging features, surgical intervention, and histological results of scar endometriosis in patients referred to a tertiary care facility.

Methods: A retrospective study of 10 histopathologically validated instances of scar endometriosis treated at CIMS Bilaspur over the course of one year was performed. We looked at the patient's age, the type of surgery they had before, the time between the surgery and the start of their symptoms, the clinical presentation, the imaging results, the surgical technique, and the outcomes. The average age of the patients was 31.8 ± 4.6 years. All patients had a history of previous obstetric or gynecologic surgery, with lower-segment cesarean section being the most prevalent (80%). The most common symptom was a painful lump at the site of the surgery (100%), with pain that came and went in 70% of cases. Ultrasonography indicated a diagnosis in 80% of cases, although MRI confirmed it in certain instances. All patients had extensive local excision with clean margins. Histopathology verified the presence of endometrial glands and stroma in every instance. No recurrence was noted during the follow-up period.

Conclusion: Scar endometriosis, while uncommon, must be examined in reproductive-age women exhibiting painful masses at scar sites, especially with cyclical symptoms. A high level of clinical suspicion, the right imaging, and full surgical removal are all important for diagnosis and treatment.

Keywords: Endometriosis; Scar Endometriosis; Cesarean Section; Cyclical Pain; Abdominal Wall Mass.

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Introduction

Endometriosis is characterized by the existence of functioning endometrial glands and stroma external to the uterine cavity. It impacts around 10–15% of women of reproductive age and is a major contributor to persistent pelvic discomfort, dysmenorrhea, dyspareunia, and infertility [1].

Pelvic endometriosis affecting the ovaries, uterosacral ligaments, and peritoneum is prevalent, however extra-pelvic endometriosis is comparatively uncommon and may affect the gastrointestinal tract, urinary system, lungs, and abdominal wall [2]. Scar endometriosis is a specific subtype of extra-pelvic endometriosis that manifests within surgical scars resulting from surgeries such as cesarean section, hysterotomy,

episiotomy, laparoscopy, or laparotomy [3]. The reported incidence of scar endometriosis subsequent to cesarean section varies from 0.03% to 0.4% [4]. As the number of cesarean deliveries around the world goes up, so will the number of cases of scar endometriosis.

The conventional triad of scar endometriosis comprises:

1. A history of surgery on the abdomen or pelvis in the past
2. A painful lump at or near the surgical scar
3. Pain that comes and goes with menstruation

But not all three traits are always there, which might make it harder to diagnose [5]. Misdiagnosis

frequently leads to several visits and unsuitable interventions.

This retrospective study seeks to elucidate the clinical spectrum of scar endometriosis, underscore diagnostic challenges, and reaffirm the significance of surgical excision with sufficient margins.

Methods and Materials

Study Design: A retrospective observational research.

The study was place at the Department of General Surgery and Obstetrics & Gynecology at CIMS Bilaspur, a tertiary care teaching hospital that serves central India. One year of study.

Number of samples: Ten patients with histopathologically verified scar endometriosis.

Inclusion Criteria:

- Female patients of reproductive age
- Presence of abdominal wall mass at past surgical scar
- Histopathological evidence of endometriosis

Criteria for Exclusion

- Pelvic endometriosis without scar involvement
- Incomplete records or missing histopathology reports

Collecting Data: The following were looked at in the medical records:

- Age and parity
- Type of previous surgery
- Time between surgery and the start of symptoms
- Clinical aspects
- Imaging findings
- Surgical management
- Histopathology
- Follow-up and recurrence

Analysis of Statistics: The data were inputted into Microsoft Excel and subjected to descriptive analysis. Continuous variables were represented as mean ± standard deviation, whilst categorical variables were represented as percentages.

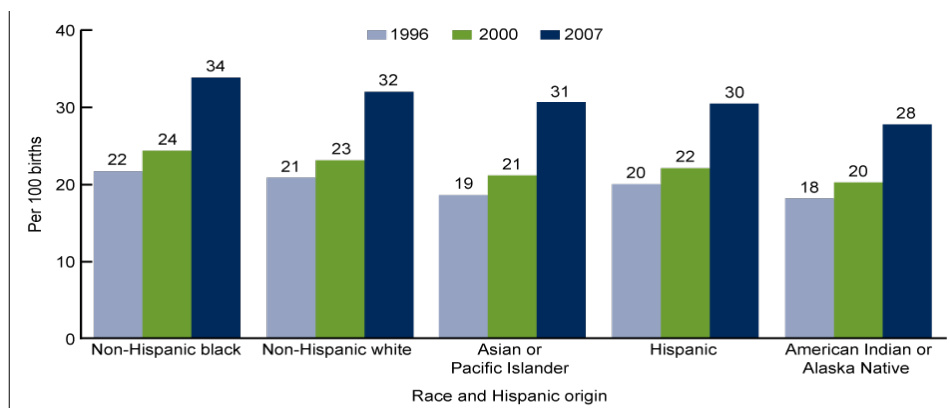
Results

Table 1: Demographic and Clinical Characteristics of Patients (n = 10)

Parameter	Value
Mean age (years)	31.8 ± 4.6
Parity (≥1)	9 (90%)
History of LSCS	8 (80%)
Other surgeries (laparotomy/laparoscopy)	2 (20%)
Mean interval from surgery to symptoms (years)	3.4 ± 1.2
Painful scar-site mass	10 (100%)
Cyclical pain	7 (70%)
Skin discoloration/bleeding	2 (20%)

Table 2: Imaging and Management Profile

Parameter	Number (%)
USG suggestive of endometriosis	8 (80%)
MRI performed	4 (40%)
Wide local excision done	10 (100%)
Mesh repair required	2 (20%)
Recurrence on follow-up	0



SOURCE: CDC/NCHS, National Vital Statistics System.

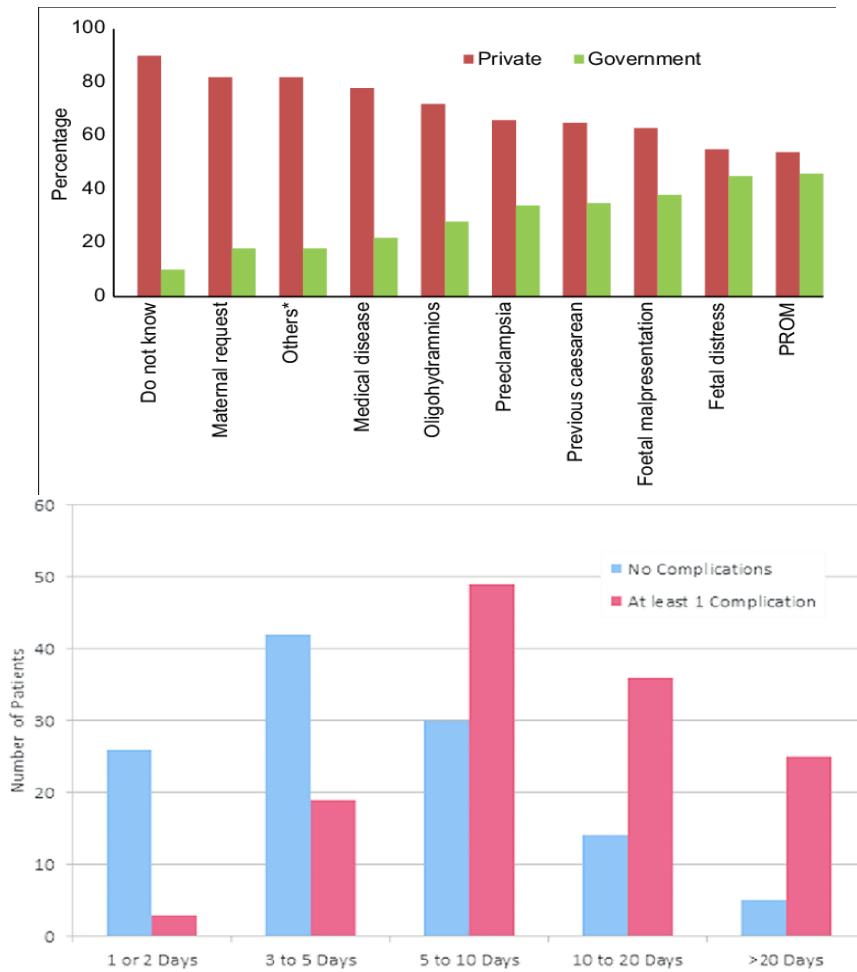


Figure 1: Distribution of Previous Surgical Procedures

(Bar diagram showing LSCS as the most common preceding surgery)

Carnett's Sign

1. Palpate site during flexed abdomen
2. If increased pain, source is likely abdominal wall
3. If no increased pain, source is likely visceral

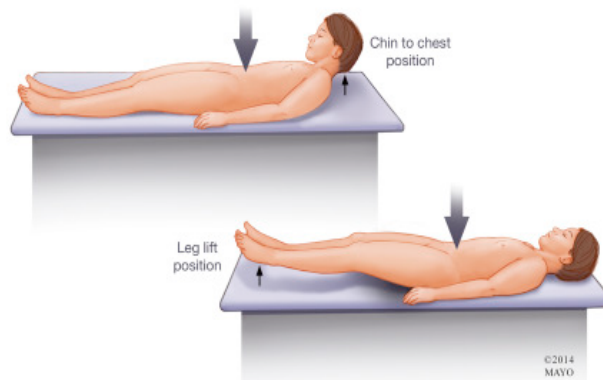


Figure 2: Clinical Presentation Pattern

Histopathological Findings: All excised specimens demonstrated characteristic features of endometriosis, including:

- Endometrial glands lined by columnar epithelium

- Surrounding endometrial stroma
- Areas of hemorrhage and hemosiderin-laden macrophages

Margins were free of disease in all cases.

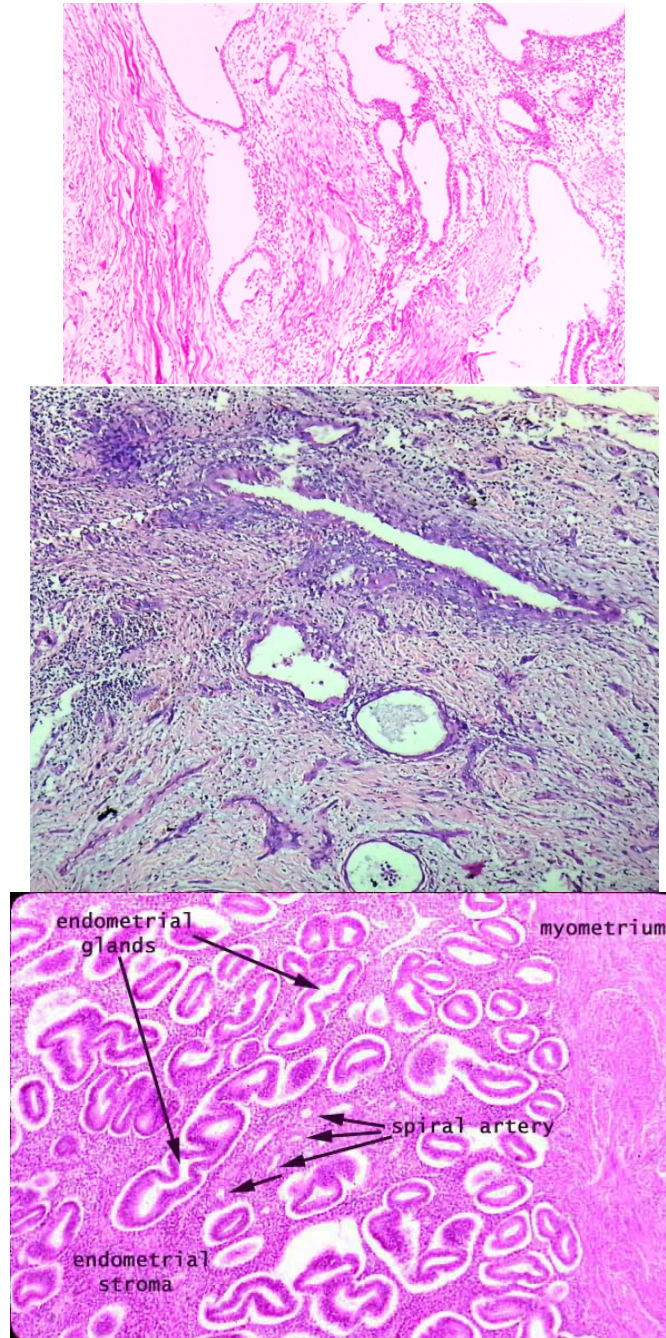


Figure 3: Clinical Presentation Pattern

Discussion

Scar endometriosis is a rare type of extra-pelvic endometriosis that happens when viable endometrial tissue is implanted into surgical wounds by mistake. Although uncommon, it has been increasingly documented in recent decades, primarily due to the escalating incidence of cesarean sections and other uterus procedures, especially in developing nations like India. This retrospective case series elucidates the clinical range, diagnostic difficulties, and therapy outcomes of scar endometriosis observed in a tertiary care

hospital in central India. In the present study, the average age at presentation was 31.8 years, with the majority of patients falling within the reproductive age category. This conclusion closely resembles data from Indian studies conducted by Goel et al. and Patel et al., which indicated a high prevalence among women aged 25–35 years [13,15].

Reports from eastern and northern India have also shown similar age ranges, which shows that the condition is sensitive to hormones [17,19]. The prevalence of multiparous women in our cohort reinforces the correlation between scar endometriosis and obstetric surgical procedures.

Lower-segment cesarean section (LSCS) was recognized as the predominant preceding operation among our patients (80%), a tendency that aligns with many Indian case reports. Sharma et al. and Bhowmik et al. reported that LSCS was the prior operation in more than three-fourths of their cases, indicating the increasing cesarean delivery load within the Indian healthcare system [17,18]. Western research have also identified cesarean section as the primary risk factor; however, the absolute incidence is lower than that observed in Indian data, perhaps attributable to variations in surgical procedures and wound care practices [4].

In our study, the latent period between the initial surgery and the emergence of symptoms varied from 1 to 6 years, averaging 3.4 years. Indian authors have shown significant variations in this time, ranging from several months to almost a decade [13,18]. This extended latency substantially impacts diagnostic delay, since patients and doctors frequently do not correlate present symptoms with a distant surgical occurrence. The sluggish proliferative activity of ectopic endometrial tissue under cyclical hormonal impact has been suggested as a viable reason for this delay [6].

All patients in our cohort exhibited a painful abdominal wall mass at or next to the surgical scar, with cyclical discomfort associated with menstruation described in 70% of instances. Cyclical pain is regarded as a traditional diagnostic criterion; nevertheless, its absence does not rule out scar endometriosis. Saxena et al. underscored that non-cyclical pain and atypical presentations often result in misinterpretation as stitch granuloma, lipoma, incisional hernia, or abscess in Indian clinical environments [14]. Ghosh et al. have also pointed out similar problems with diagnosis. They said that primary care doctors typically don't know enough about the issue, which leads to repeated conservative therapies before a conclusive diagnosis is made [19].

Imaging serves a helpful albeit non-definitive function in diagnosis. Ultrasonography indicated endometriosis in most of our patients and was utilized as the primary imaging technique. But its results are often not very clear. MRI, conducted in some instances, offered enhanced delineation of lesion extent and involvement of deeper tissue planes. Patel et al. and Sharma et al. have conducted Indian studies that support the use of MRI as an important tool for preoperative planning, especially for big or recurrent lesions [15,17]. Still, histological investigation is still the best way to make a diagnosis.

All patients in this research underwent extensive local excision with sufficient disease-free margins, which is commonly recognized as the final treatment. No recurrences were noted during the

follow-up period. This result aligns with Indian research, which indicates that complete surgical excision correlates with a favorable prognosis and reduced recurrence [15,18]. Conversely, inadequate excision and dependence only on medicinal therapy have been associated with elevated recurrence rates. Hormonal treatments, such as progestins and gonadotropin-releasing hormone analogues, may offer transient symptom alleviation; nevertheless, they do not eradicate the lesion and are not regarded as curative [11].

A significant but infrequent issue is the malignant development of scar endometriosis, predominantly into clear cell or endometrioid cancer. While the current research did not see any such cases, sporadic reports from India and internationally have recorded this consequence, underscoring the necessity for prompt diagnosis and total excision [12]. Indian writers have proposed preventive measures during obstetric and gynecologic surgeries—such as thorough irrigation of wound edges and the prevention of endometrial contamination—to mitigate the chance of implantation [13,17]. In general, the results of this study support what is already known in Indian and Western literature. They also stress the need for more clinical suspicion in places with few resources. With the increasing cesarean section rates in India, scar endometriosis is expected to be more prevalent, necessitating knowledge among surgeons, gynecologists, and pathologists for prompt identification and care.

Conclusion

Scar endometriosis is an uncommon yet notable etiology of painful abdominal wall masses in women with a history of obstetric or gynecological procedures. A high level of suspicion is crucial for early identification, particularly in individuals experiencing recurrent pain at scar locations. Imaging helps with evaluation, but histopathology is still the best way to do it. Wide local excision with clear margins is a cure and stops the disease from coming back.

Clinical Implications

- Always think about scar endometriosis in women of childbearing age who have pain at the site of the scar
- During surgery, careful cleaning of the borders of the wound is a strategy to avoid problems. Early surgical referral prevents diagnostic delays and morbidity.

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