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ISOLATED CESAREAN SCAR ENDOMETRIOSIS: A CASE REPORT

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ABSTRACT

Cesarean scar endometriosis is an uncommon form of abdominal wall endometriosis that may present as a painful lesion along a previous surgical scar. We report the case of a 39-year-old woman with a history of two cesarean sections who presented with cyclic right-sided abdominal wall pain during menstruation. Magnetic resonance imaging revealed a 30 × 13 mm lesion along the cesarean scar, closely abutting the right rectus abdominis muscle. The lesion was isointense to skeletal muscle on fat-suppressed T1-weighted images, slightly hyperintense on T2-weighted images, and demonstrated contrast enhancement, without detectable hemorrhagic foci. No additional pelvic endometriotic lesions were identified on MRI. The imaging findings, in conjunction with the characteristic clinical presentation, were highly suggestive of cesarean scar endometriosis, subsequently confirmed histopathologically. This case highlights the diagnostic value of MRI in identifying scar endometriosis, even in the absence of typical hemorrhagic signal characteristics.

KEYWORDS

Abdominal Wall Endometriosis ; Cesarean Section ; Ectopic Endometriosis ; Extrapelvic Endometriosis.

MAIN ARTICLE

INTRODUCTION

Abdominal wall endometriosis is an uncommon form of extrapelvic endometriosis, most frequently associated with previous abdominal or pelvic surgery, particularly cesarean delivery. Direct implantation of endometrial tissue into the surgical wound is considered the principal mechanism [1–3].

Cesarean scar endometriosis typically presents as a painful mass near the surgical scar, often associated with cyclic menstrual-related symptoms [4,5]. MRI helps characterize the lesion, define its relationship with the abdominal wall, and assess for associated pelvic endometriosis [6,7].

We report a case of histopathologically confirmed isolated cesarean scar endometriosis in a 39-year-old woman with two previous cesarean sections, presenting with cyclic abdominal wall pain and a solitary scar-related lesion without MRI evidence of associated pelvic endometriosis.

CASE PRESENTATION

A 39-year-old G2P2 woman with a history of two previous cesarean sections presented with recurrent right-sided parietal abdominal pain. The pain was cyclic and occurred during menstruation.

Pelvic MRI was performed for further evaluation.

MRI demonstrated a 30 × 13 mm soft-tissue lesion in the right anterior abdominal wall, located along the trajectory of the previous cesarean section scar and closely abutting the right rectus abdominis muscle, without a discernible intervening fat plane (Figure 1A–C). The lesion was relatively well delineated, with slightly irregular margins. On axial T2-weighted images, it was slightly hyperintense relative to the adjacent skeletal muscle (Figure 1A). On unenhanced axial fat-suppressed T1-weighted images, it was isointense to muscle, without spontaneous T1-hyperintense hemorrhagic foci (Figure 1B). Sagittal contrast-enhanced fat-suppressed T1-weighted images demonstrated enhancement along the previous cesarean section scar trajectory (Figure 1C).

The lesion was confined to the anterior abdominal wall, without evidence of extension into the underlying intra-abdominal structures.

A systematic evaluation of the pelvis revealed no additional lesions suggestive of endometriosis. Both ovaries were normal in morphology, without endometriomas or other

focal lesions. No abnormalities were identified involving the uterosacral ligaments, round ligaments, or rectal wall. There was no MRI evidence of deep pelvic endometriosis.

The combination of the patient's cyclic menstrual-related parietal pain, history of two cesarean sections, and the location of the lesion along the previous cesarean section trajectory was considered highly suggestive of cesarean scar endometriosis.

The clinicoradiological diagnosis of cesarean scar endometriosis was subsequently confirmed by histopathological examination.

DISCUSSION

Abdominal wall endometriosis is an uncommon form of extrapelvic endometriosis, with cesarean scar endometriosis representing its most frequent postsurgical form [1,2]. In a systematic review of scar endometriosis, previous cesarean delivery was reported in 64–96% of affected patients, highlighting the strong association between cesarean delivery and scar endometriosis [2].

The reported incidence of cesarean scar endometriosis varies across studies, reflecting differences in study populations, case ascertainment, diagnostic criteria, and follow-up [3,8,9].

The most widely accepted explanation for cesarean scar endometriosis is the direct implantation theory. During cesarean delivery, endometrial tissue may be transferred to the surgical wound and implanted within the abdominal wall. Subsequent exposure to cyclic hormonal stimulation can promote proliferation and symptomatic activity of the ectopic tissue [1,3].

Other mechanisms, including lymphatic and hematogenous dissemination, have been proposed. However, direct implantation provides a particularly plausible explanation when an isolated lesion is located precisely along a previous cesarean section scar.

This mechanism is highly relevant in the present case. The lesion was located along the trajectory of the previous cesarean section, while no additional pelvic endometriotic lesions were identified on MRI.

The absence of additional pelvic endometriotic lesions on MRI is an important feature of the case. However, a negative MRI examination cannot exclude all forms of pelvic endometriosis, particularly superficial peritoneal disease.

Historically, abdominal wall endometriosis has sometimes been considered in the context of a broader endometriotic predisposition. However, recent evidence supports the possibility that cesarean scar endometriosis can develop independently through local implantation.

A 2026 systematic review including 484 cases of abdominal wall endometriosis following cesarean section found that prior endometriosis was reported in only 9.4% of patients and concomitant endometriosis in 8.1%. The authors concluded that the low frequency of coexisting disease supports iatrogenic implantation as a sufficient initiating event [10].

These findings are particularly relevant to our case. The patient had a solitary lesion at the cesarean scar and no MRI evidence of ovarian or deep pelvic endometriosis. Therefore, the absence of MRI-detectable pelvic disease should not be considered an argument against the diagnosis.

Rather, the lesion's isolated distribution is compatible with direct implantation of endometrial tissue during cesarean delivery.

The classical presentation of cesarean scar endometriosis consists of a painful mass at or near a previous cesarean scar, with symptoms that worsen or recur during menstruation [1,2,4].

In a series of 10 patients with abdominal wall endometriosis evaluated by MRI, eight presented with cyclic pain associated with a palpable abdominal wall lesion [6]. Similarly, pain and local swelling are consistently reported among the most frequent manifestations of scar endometriosis [2].

Our patient presented with cyclic right parietal pain during menstruation, providing a highly characteristic clinical clue.

The temporal relationship between symptoms and menstruation is particularly useful because ectopic endometrial tissue remains responsive to hormonal changes throughout the menstrual cycle. Nevertheless, cyclic symptoms are not obligatory, and their absence should not exclude the diagnosis.

MRI is particularly useful for evaluating abdominal wall endometriosis because it provides excellent soft-tissue contrast and allows multiplanar assessment of the abdominal wall [6,7].

MRI can determine whether a lesion is located within the subcutaneous tissues, along the aponeurosis, or within the rectus abdominis muscle and can demonstrate its relationship to deeper fascial and peritoneal structures. This information is particularly useful for evaluating disease extent and planning surgical treatment [6,7].

The MRI appearance of abdominal wall endometriosis is variable and reflects the relative proportions of endometrial tissue, hemorrhage, fibrosis, and other tissue components. T1-weighted fat-suppressed images may demonstrate hyperintense foci related to blood products, while fibrous components can demonstrate low signal intensity on T2-weighted sequences [6].

In the series by Busard et al., abdominal wall endometriotic lesions were most commonly located within the rectus abdominis or adjacent to the aponeurosis of the abdominal wall muscles. Most lesions demonstrated isointense or slightly hyperintense signal compared with muscle on T1-weighted fat-suppressed and T2-weighted images, sometimes with focal areas of high signal intensity related to hemorrhage [6].

Our patient's lesion was isointense to skeletal muscle on unenhanced fat-suppressed T1-weighted images and slightly hyperintense relative to muscle on T2-weighted images, with enhancement after gadolinium administration. No spontaneous T1-hyperintense hemorrhagic foci were identified. Although such hemorrhagic foci are a recognized MRI feature of abdominal wall endometriosis, they are not invariably present [6]. The lesion closely abutted the right rectus abdominis muscle without a discernible intervening fat plane; this finding alone does not establish muscular invasion. Although these imaging findings are not individually specific, their combination with the lesion's scar-related location and the patient's cyclic symptoms strongly favored cesarean scar endometriosis.

MRI also allowed assessment of the pelvis, with no additional endometriotic lesions identified on the examination.

The differential diagnosis of an abdominal wall mass at a previous surgical site includes incisional hernia, suture granuloma, chronic hematoma, abscess, desmoid-type fibromatosis, and other soft-tissue tumors [1,5,7].

Incisional hernia can generally be distinguished by identification of a fascial defect and protrusion of intra-abdominal contents. Chronic hematoma may demonstrate variable signal characteristics depending on the age of the blood products and the clinical history.

Desmoid-type fibromatosis is an important differential diagnosis, particularly in women of reproductive age. It may occur within the abdominal wall and demonstrate variable T1 and T2 signal intensity with contrast enhancement. However, the absence of a specific relationship with the menstrual cycle and the lack of a characteristic cesarean-scar distribution may help distinguish it from endometriosis.

In the present case, the combination of previous cesarean delivery, cyclic menstrual-related pain, and a lesion located along the cesarean section trajectory strongly favored abdominal wall endometriosis over these alternative diagnoses.

Although histological examination can provide definitive confirmation, imaging plays a central role in the preoperative assessment of abdominal wall endometriosis. Ultrasound is commonly used as an initial examination, particularly for superficial lesions, whereas MRI provides superior soft-tissue characterization and assessment of lesion extent [6,7].

In patients with a highly characteristic clinical presentation, the demonstration of a solid lesion centered on the previous cesarean scar and compatible MRI features can provide a strong clinic-radiological diagnosis.

In our case, the clinical presentation and MRI findings strongly suggested cesarean scar endometriosis, which was subsequently confirmed histopathologically. MRI played a key role in the preoperative assessment by demonstrating the lesion's location along the cesarean scar trajectory, defining its relationship with adjacent abdominal wall structures, and excluding additional MRI-detectable pelvic endometriotic lesions.

CONCLUSION

Cesarean scar endometriosis is an uncommon but important cause of cyclic abdominal wall pain in women with a history of cesarean delivery.

The combination of cyclic menstrual-related parietal pain, previous cesarean section, and a soft-tissue lesion located along the surgical scar should strongly suggest the diagnosis.

MRI is particularly valuable for characterizing the lesion, defining its relationship with the abdominal wall structures, and assessing for associated pelvic endometriosis.

This case illustrates histopathologically confirmed cesarean scar endometriosis without additional ovarian or deep pelvic endometriotic lesions identified on MRI. This pattern is compatible with the hypothesis of direct implantation of endometrial tissue during cesarean delivery and is supported by recent literature showing that concomitant endometriosis is uncommon among patients with post-cesarean abdominal wall endometriosis.

Recognition of this entity is important because its characteristic clinical and imaging findings can support a strong preoperative clinicoradiological diagnosis and help distinguish it from other abdominal wall masses.

FIGURES:

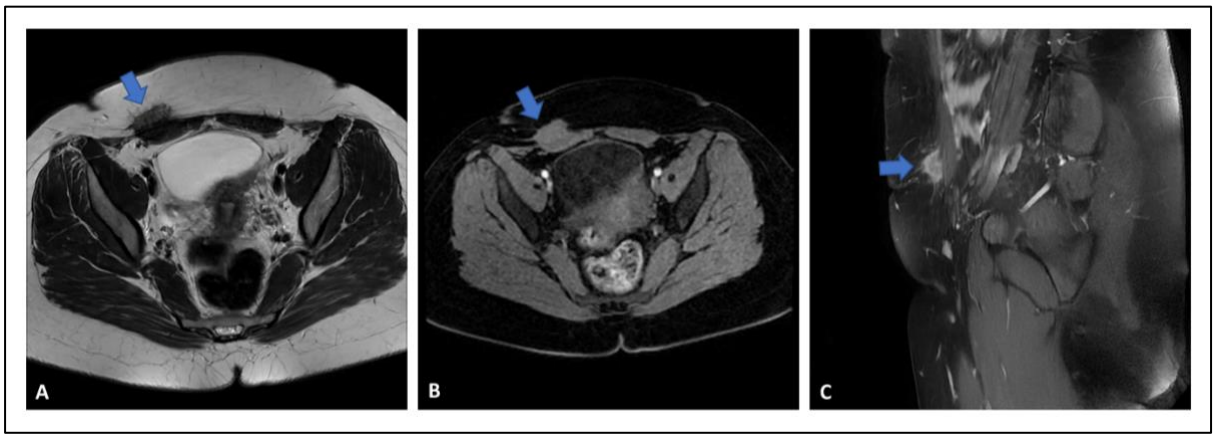


Figure 1. Magnetic resonance imaging findings of histopathologically confirmed cesarean scar endometriosis.

(A) Axial T2-weighted image demonstrating a slightly hyperintense soft-tissue lesion (arrow) in the right anterior abdominal wall, closely abutting the right rectus abdominis muscle without a discernible intervening fat plane.

(B) Axial unenhanced fat-suppressed T1-weighted image showing signal intensity similar to the adjacent skeletal muscle, without spontaneous T1-hyperintense hemorrhagic foci (arrow).

(C) Sagittal contrast-enhanced fat-suppressed T1-weighted image demonstrating enhancement of the lesion (arrow), located along the trajectory of the previous cesarean section scar.

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