Abdominal Scar Endometriosis after Caesarean Section: Report of Five Cases
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ABSTRACT

Scar endometriosis is an under-appreciated or misdiagnosed phenomenon in general surgery and may eventually be more common than reflected in the literature. We herein report five cases of scar endometriosis that were treated in our surgical department one to five years after Caesarean section. Scar endometriosis should be considered when the symptoms are present in a cyclic manner, mostly after gynaecological operations and worsening during menstruation. Diagnosis is mainly based upon a high index of suspicion. The treatment of choice is surgical resection.

Keywords: Caesarean, endometriosis, extrapelvic, scar

INTRODUCTION

Endometriosis, the presence of functioning endometrial tissue outside the uterus, is a common gynaecological condition. Its incidence in the general women population is 7–10% (1) and rises to 20–50% in fertile women (2–7). Rarely, endometriosis has extrapelvic localizations (8, 9) such as the kidney, pleura, pancreas and skin. In women who had undergone a pelvic operation, scar endometriosis is not rare (10–12) and its incidence is 1% after abdominal hysterectomy and 0.03 – 0.04% after a Caesarean section (13, 14). Scar endometriosis is an under-appreciated or misdiagnosed phenomenon in general surgery, and may eventually be more common than reflected in the literature. We herein report five cases of scar endometriosis that were treated in our surgical department one to five years after Caesarean section.

CASE REPORTS

All five cases are summarized in Table 1.

Case 1
BH, a 29-year old woman, was admitted on March 2005 with a diagnosis of left inguinal hernia. She referred to pain and the presence of a small mass, especially after strain and weight lifting, in the left inguinal region and a history of severe dysmenorrhoea. She had two Caesarean sections, 5 and 3.5 years ago. Surgical exploration revealed a small mass of approximately 2.5 x 2 cm that resembled a hematoma which was subsequently removed. Microscopically, the mass was of endometrial origin, presenting as endometrial glands and stroma.

Case 2
KI, a 21-year old woman, presented on December 2005 for a painful swelling in the right abdominal region. The pain related to her menstrual cycles and she mentioned two Caesarean sections (the last one a year ago). Ultrasound and...
computed tomography (CT) scan revealed the presence of a circumscribed tissue beneath the rectus abdominis muscle. She underwent a surgical procedure which revealed a mass 3.3 x 2.5 cm in the sheath of the rectus abdominis. Histology confirmed foci of endometriosis between the fibrous tissue (Figure).

**Case 4**
MB, a 26-year old woman, was admitted on February 2009 for surgical removal of a painful mass at the right lateral abdominal wall. The patient’s symptoms had a cyclic character accompanying her menstruation. She had undergone Caesarean section one year before. Fine needle aspiration cytology confirmed the initial suspicion of endometriosis. At operation, an elastic mass 2 x 2 cm beneath the external oblique aponeurosis was resected. Histology described tissue of endometrial origin.

**Case 5**
MK, a 29-year old woman, was admitted to hospital on August 2009, a year following Caesarean section. She complained of a painful swelling at the right margin of the surgical scar. The preoperative diagnosis was that of an incisional hernia. During the operation, a mass 3 x 2.5 cm beneath the external oblique aponeurosis was revealed. Microscopically, that mass was characterized by multiple foci of endometriosis between the fibrous tissue.

All five patients were followed-up for 1-5 years after operation with no signs of recurrence.

**DISCUSSION**
Extrapelvic endometriosis, though uncommon, can occur in subcutaneous tissues of surgical scars, or in the surrounding areas, following obstetric and gynaecological procedures. These implants are more likely to occur as a consequence of procedures performed during gestation including Caesarean section and normal delivery (episiotomy scar) or as a consequence of procedures that involved endometrial tissue, such as hysterectomy, ectopic pregnancies, salpingostomies and those performed during the first half of the pregnancy (10–15).
Several mechanisms can explain the incidence of scar endometriosis. Direct implantation of endometrial cells at the time of the operation is the dominant explanation. The lack of secure closure of the parietal and visceral peritoneum during Caesarean section and reduced care to avoid dissemination of endometrial cells may also be associated with endometriosis at the surgical scar. This scenario, however, is rare and the increased incidence particularly after Caesarean section [0.03%] (13–15) does not conform with this rate. Metaplasia of peritoneal mesothelial cells (16) which remain in the incision during the initial operation has also been reported. The theories of lymphatic or vascular dissemination (17), as well as retrograde menstruation are not widely accepted. Finally, the recent hypothesis that the presence of endometriosis is related to immunogenetic defects (18, 19) may explain its development via inadequate response of the peritoneal defensive system to the retrograde flow or implantation of endometrial tissue.

The real incidence of scar endometriosis is unknown, as only a few studies with a series of several cases are available (20–24). Difficulty to confirm the diagnosis is the most common factor of missed cases. The presence of a mass at the surgical scar, especially after gynaecological procedures, with symptoms that accompany menstruation is pathognomonic of endometriosis. In our series, diagnosis was incident in two out of five cases, in which scar endometriosis mimicked an inguinal and an incisional hernia respectively. According to other reports, scar endometriosis can also mimic a lipoma, a cyst, an abscess or an incisional granuloma (25).

The diagnosis of scar endometriosis is difficult to establish purely based on clinical examination. Ultrasonography is non-specific and its main role is to exclude incisional hernias. Computed tomography (26, 27), Magnetic Resonance Imaging [MRI] (27), ultrasonography (28) and FNA (29) have been reported as diagnostic with variable success. Samples from two patients were submitted for FNA. The diagnosis was accurate in one, while in the other, it was false negative.

Hormone therapy, with oral contraceptives, progestrone and gonadotropin-releasing hormone analogues, has not been shown to be of consistent benefit and recurrence is common on cessation of therapy. The treatment of choice remains the wide surgical excision to healthy margins, providing both diagnostic and therapeutic intervention. The presence of residual endothelial tissue is associated with recurrences. As ectopic endometrial tissue can theoretically undergo malignant transformation, histologic evaluation is necessary.

REFERENCES