

Scar endometriosis: an entity not to be forgotten

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Abstract

Scar endometriosis is an uncommon but well-described condition. It is caused by the dissemination of endometrial tissue in the wound at the time of surgery. The deposits can involve uterine scar, abdominal musculature or subcutaneous tissue, with the latter being the most common. It usually presents as a palpable mass at the scar site with or without cyclical pain. We report three cases of scar endometriosis which presented with cyclical pain and swelling at the abdominal wall scar following uterine surgery. The patients underwent imaging which revealed abnormal findings at the scar site suggesting scar endometriosis. In the presence of strong clinical suspicion and supportive imaging, all three of them underwent local excision of the lesion. The diagnosis of endometriosis was confirmed on histopathology.

Keywords: Scar endometriosis, Endometrial tissue, Uterine surgery, Cyclical pain, Case series.

Introduction

Endometriosis is defined as the presence of functioning endometrial tissue outside the uterine cavity.¹ Scar endometriosis is an uncommon but well-described condition. It is caused by the dissemination of endometrial tissue into the wound at the time of surgery.² Scar endometriosis can occur after prior abdominopelvic surgeries and interventions such as hysterotomy, salpingostomy, episiotomy, caesarean section (C-section), appendectomy, amniocentesis and laparoscopy.^{2,3} The deposits can involve uterine scar, abdominal musculature or subcutaneous tissue with the latter being the most common site of extragenital endometriosis.⁴ Estimated incidence after caesarean delivery is 0.03-0.4% and may reach up to 1.08% after hysterotomy.^{3,5} The endometrial implant may be cystic, solid or mixed.⁵ It usually presents as a palpable mass at the scar site with or without cyclical pain.^{2,6-8}

Case Series

Case 1

A 31-year-old female with history of three previous

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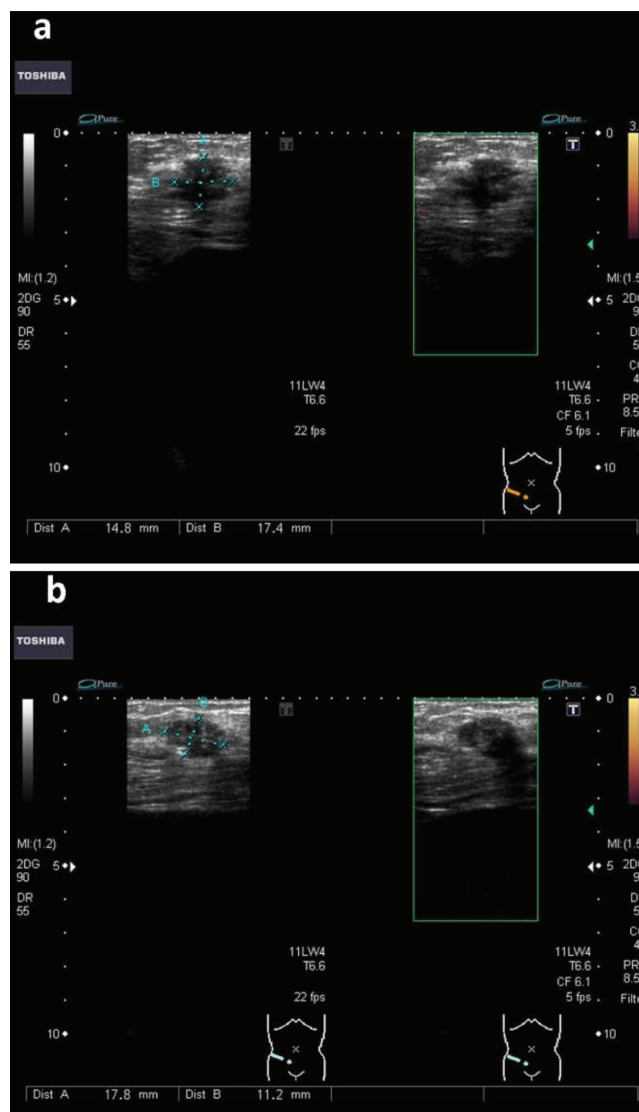


Figure-1: A) Grey scale and color Doppler image of palpable nodule at scar site within the anterior abdominal wall showing an irregular solid hypoechoic lesion measuring 1.7 x 1.4 cm. B) Grey scale and color Doppler image of the second lesion at the same site shows another solid hypoechoic lesion measuring 1.7 x 1.1 cm. No internal vascularity was seen in either of them.

caesarian sections presented in May, 2013 with complaints of swelling on the right-side of the scar for 4 years. The swelling was small initially but gradually progressed. The patient had noted the increase in size of

the swelling as well as pain during menstruation. On examination, an ill-defined, mildly tender swelling was noted on the right side of the scar. Ultrasound of the swelling showed two irregular hypoechoic solid nodules, measuring 1.7 x 1.4 cm and 1.7 x 1.1 cm, within the subcutaneous tissue at the site of caesarean scar (Figure-1). No internal vascularity was identified on Doppler imaging. The diagnosis of scar endometriosis was suggested. The nodules were excised under general anaesthesia and histopathology investigation revealed fibrocollagenous and fibroadipose tissue exhibiting endometrial glands surrounded by endometrial type stroma consistent with scar endometriosis. Post-operatively, the patient remained well. She was pain-free and was discharged in stable condition.

Case 2

A 35-year-old female, who had history of total abdominal hysterectomy due to fibroids, presented in June, 2014 with complain of cyclical pain and swelling along the abdominal scar. On examination, a small 2 x 3cm tender nodule was noted within the subcutaneous tissue at the site of abdominal scar. The patient underwent a magnetic resonance imaging (MRI) examination. An abnormal signal intensity lesion was seen within the abdominal wall on the left of midline, overlying the left rectus abdominis muscle and inseparable from it. The lesion measured 3.2 x 2.8 cm. It showed low signal intensity on T1-weighted images and high intensity on T2-weighted images, with few foci of hyperintensity on T1 fat-saturated images, showing diffuse enhancement on post-contrast images (Figure-2). It was reported likely to be scar endometriosis. The lesion was excised under general anaesthesia and histopathology report was compatible with

endometriosis. Post-operatively the patient had smooth recovery and was discharged in stable condition.

Case 3

A 28-year-old female, with history of caesarian section, presented in July, 2010 with complaints of swelling at scar site and pain during menstruation. Ultrasound showed a hypoechoic solid appearing lesion in subcutaneous region at the site of pain within the scar in lower abdomen measuring about 10.7 mm x 6.6 mm in size. Peripheral vascularity was noted on colour Doppler. As there was a strong suspicion of scar endometriosis, the patient underwent excision of the lesion under local anaesthesia. Histopathology showed fibro-fatty tissue with endometrial glands and stroma confirming endometriosis.

Discussion

Abdominal wall endometriosis is characterised by the presence of a nodule along the surgical scar, most often after caesarean section but is also seen after hysterectomy and laparotomy.⁹ The pathogenesis involves transplantation of endometriotic cells into the wound during surgery and their stimulation by oestrogen.^{3,10} The patient may present several months to years after the surgical procedure.¹⁰ The diagnosis is suspected when there is a mass at the surgical scar site which becomes painful with menstruation.⁶⁻⁸ The diagnosis may be difficult when classical symptoms are absent. This is seen in about one-third of the cases.¹⁰ Two of our cases had history of caesarian sections and one had a previous hysterectomy indicating iatrogenic implantation theory. All of them presented with nodule at the scar site and cyclical pain.

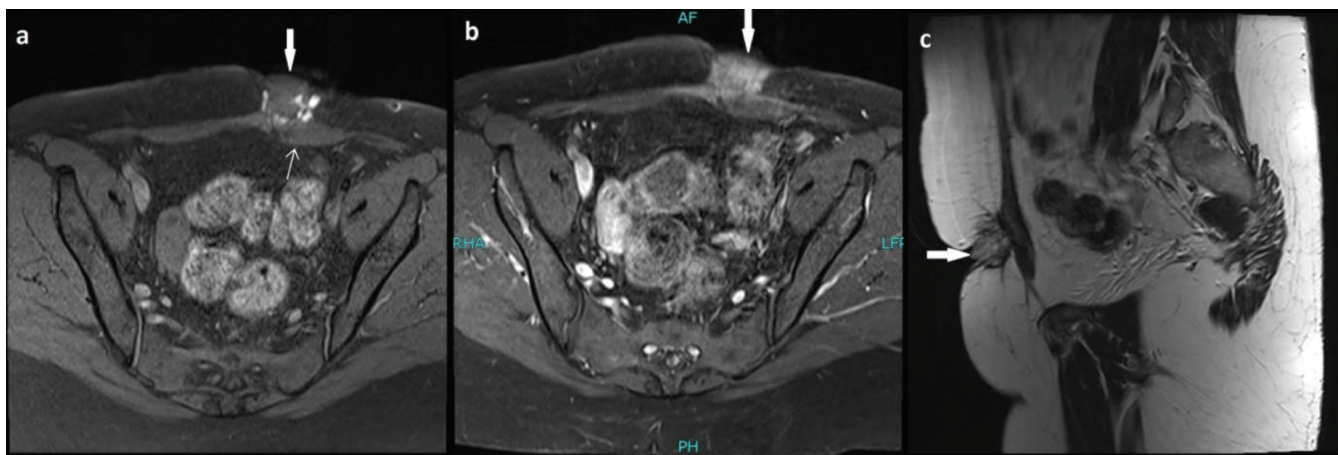


Figure-2: A) Axial T1-weighted fat-saturated image showing an isointense signal intensity mass (solid white arrow) within the anterior abdominal wall abutting the left rectus abdominis muscle (thin white arrow) with foci of hyperintensity suggesting haemorrhage. B) Axial post contrast T1-weighted image showing diffuse enhancement of the lesion (arrow). C) Sagittal T2-weighted image showing the lesion to be heterogeneously hyperintense (arrow).

Non-invasive investigations which may help in diagnosis include ultrasound examination with and without Doppler imaging, computed tomography (CT) scan and MRI. On ultrasound, scar endometriomas usually appear as hypoechoic and heterogeneous solid masses and may show internal vascularity. Some of them may also show mild cystic change.⁹

Two of our cases underwent preoperative ultrasound examination which revealed solid hypoechoic lesions. Vascularity was however appreciated only in one of them.

The lesions appear as solid enhancing mass in the abdominal wall closely related to the surgical site on CT scans.^{4,9} MRI, however, is superior to CT scan because of better contrast and spatial resolution, and the ability to show haemorrhage. On MRI, these usually appear heterogeneously hyperintense on T1 and T2-weighted images and may show areas of contrast enhancement.⁵ In our case, the signal was low on T1- and heterogeneously hyperintense on T2-weighted images. Foci of hyperintensity were seen on T1 fat-saturated images suggesting blood and was diffusely enhancing after contrast administration.

There are a few mimickers of scar endometriosis, which can be considered in differential diagnosis. Desmoid tumour is one of them; however it lacks cyclical pain and is often associated with other fibromatosis. Haematoma is another differential and would be supported by history of recent trauma. Metastatic implants, neuroma and scar granuloma are few other differentials.⁴ Several studies have therefore reported fine needle aspiration cytology (FNAC) as preoperative workup.^{2,10} This may be considered when the presentation is atypical and diagnosis is doubtful. There is, however, a remote chance of needle tract endometriosis and the site of aspiration needs to be included in the resection field. None of our cases underwent FNAC as all of them had history of uterine surgery and typical clinical presentation and imaging findings.

Wide local excision is the treatment of choice. With adequate resection margins chances of recurrence are low. On the other hand, medical treatment with hormone suppressive agents temporarily relieves symptoms and has low success rate. All our patients underwent excision of the lesion based on strong clinical suspicion and suggestive imaging findings. The diagnosis was

confirmed on histopathology investigation. The patients remained symptom free on follow up.

Conclusion

Scar endometriosis should be considered a top differential diagnosis in a female presenting with painful nodule or mass at the scar site aggravated with menstruation, following a caesarian section or hysterectomy. Adequate surgical excision relieves patient symptoms.

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Exemption for ethical approval was obtained for all three cases from the institute's Ethical Review Committee.

Conflict of Interest: None.

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