

# Abdominal Wall Scar Endometrioma

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## INTRODUCTION

Abdominal wall scar endometrioma (AWSE) results from implantation of endometrial tissue under the scar following surgery on the uterus, and presents as a lump due to repeated bleeding during menstruation.<sup>1</sup> Implantation of endometrial tissue into the abdominal wall can occur following caesarean section (CS), laparoscopic or open transabdominal hysterectomy and procedures performed for pelvic endometriosis. The cells proliferate and undergo changes under the influence of oestrogen and progesterone during each menstrual cycle, resembling to those occur in the uterine endometrium. Bleeding into a confined space, particularly within the scar tissue, can lead to cyclical abdominal pain during menstruation, which can be disabling.<sup>2</sup> The pain can pose diagnostic dilemmas in cases where a lump is not palpable and abdominal wall obesity is present. Here we report a case of AWSE and review the published literature pertinent to its diagnosis, treatment and prevention strategies.

## ABSTRACT

Abdominal wall scar endometrioma is an uncommon clinical entity, which presents with lump and cyclical abdominal pain during menstruation, which develops after caesarean section or gynaecological procedures. Differential diagnosis includes a haematoma, desmoid tumour, incisional hernia, sarcoma, metastatic malignancies and suture granuloma. Adenocarcinoma developing from abdominal wall scar endometrioma are aggressive and carry poor prognosis. An awareness of this clinical entity is important to establish its diagnosis early and ultrasound scan, magnetic resonance scan, or a computerised tomographic-guided localization followed by surgical excision provides best outcome. Here in, a case of abdominal wall scar endometrioma is reported and review of pertinent literature is presented.

## KEY WORDS

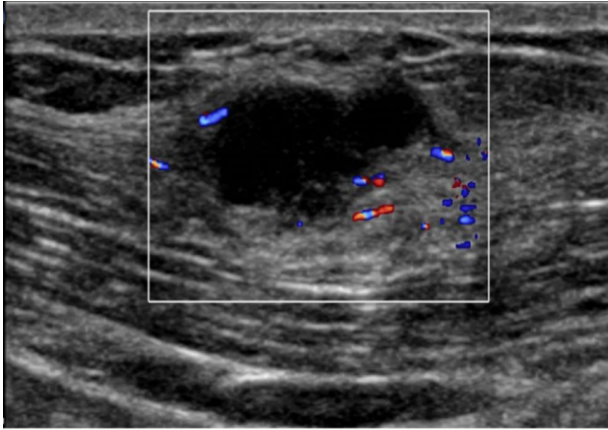
*Caesarean section, diagnosis, endometrioma, scar, treatment*

## CASE REPORT

A 32-year-old female was referred to our general surgical outpatient clinic of our institute by her general practitioner on January 2014, who had noticed a lump in her left iliac fossa 2 months previously. The lump became prominent at the time of menstruation and was associated with exacerbation of pain. She had undergone a CS 2 years previously. On examination, there was 2X2 cm palpable lump in the left iliac fossa superolateral to the Pfannenstiel incision, which was mildly tender, firm in consistency and located in the subcutaneous plane.

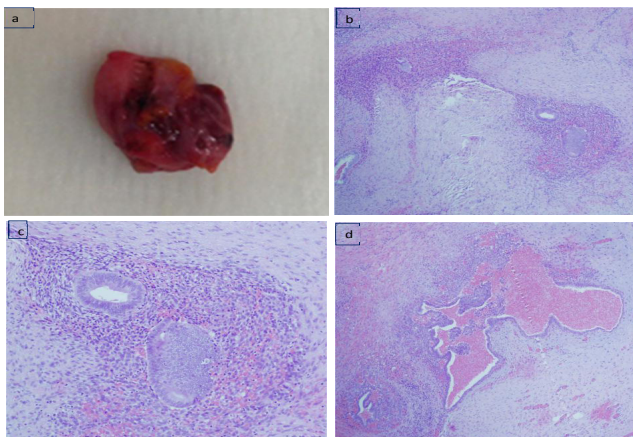
Ultrasound scan of the abdominal wall showed a thick-walled cystic area measuring 15X7X11 mm lying deep to the external oblique aponeurosis with vascular flow around its periphery (fig. 1). Although the nature of the lesion was uncertain, it was suggestive of a haematoma, but a malignant lesion could not be excluded.

The lump was explored under general anaesthesia as a day case. A firm lump was located deep to the external oblique aponeurosis densely adherent to the internal



**Figure 1.** Ultrasound scan showing a hypoechoic cystic lump lying deep to external oblique aponeurosis.

oblique muscle, which was excised together with a rim of surrounding muscle to ensure complete excision. On transecting the lump, old liquefied dark blood was present within the lump, and the lump cut with a gritty feeling indicating presence of dense scar tissue on its wall (fig. 2a). The low power micrograph showed endometrial glands and stroma surrounded by dense cellular fibrous tissue with appearances characteristic of endometriosis within a scar (fig. 2b). The medium power photomicrograph showed an endometriotic deposits with evidence of the stromal (fig. 2c) and intraluminal haemorrhage (fig. 2d). There was no evidence of neoplastic changes such as atypical endometrial hyperplasia or adenocarcinoma within the endometriotic foci, which are rare but recognised complications. Following excision of the lump, there was complete resolution of symptoms.



**Figure 2.** (a) Macroscopic appearance of the excised lump; (b) Endometrial glands and stroma surrounded by dense cellular fibrous tissue (H & E x 40); (c) Endometriotic deposit with evidence of the stromal haemorrhage (H & E x 100); (d) Endometriotic deposit with evidence of intraluminal haemorrhage (H x E 100).

## DISCUSSION

The presence of endometrial tissue in the extrauterine sites, endometriosis, is most commonly encountered in the peritoneal cavity, while this does occur in a small but significant proportion of cases in the abdominal wall following obstetric and gynaecological surgery.

Spontaneous endometriosis can occur in the abdominal wall, although this can occur exceptionally at unusual sites, such as extremities.<sup>3</sup> Endometrium has the potential for implanting itself in any tissue outside uterine cavity and grow and is commonly seen in the cutaneous and subcutaneous fat tissue at the CS scar level, but can occur at the intramuscular plane occasionally. Port site endometriosis following laparoscopic surgery for treatment of endometriosis can lead to endometrioma on the rectus sheath.<sup>4</sup>

The incidence of AWSE after a caesarean section is around 0.03 to 0.04%. The classical triad of symptoms includes the presence of a mass, generally painful, associated with a cyclic variation of pain and size of the lump.<sup>5</sup> However, non-cyclic and persistent pain may be present in 25% of cases.<sup>6</sup> In a systematic review including 455 patients with AWSE, the pooled mean age was 31.4 years. Ninety-six percent presented with a mass, 87% presented with pain, and 57% presented with cyclic symptoms. AWSE was associated with a CS scar or hysterectomy in 57% and 11% of cases, respectively. The interval from index surgery to presentation was 3.6 years.<sup>7</sup>

The differential diagnosis of these lesions includes desmoid tumour, which may be erroneously diagnosed on small, non-representative core biopsy specimens.<sup>8</sup> Incisional hernia, sarcoma, metastatic malignancy and a suture granuloma are other differential diagnoses. The presence of endometriosis in other locations can aid in the diagnosis, but other endometriotic lesions do not always exist.<sup>9</sup>

Secondary changes, including clear cell adenocarcinoma, although rare, can arise from endometriosis, which is aggressive and carries a poor prognosis.<sup>10</sup> In a review, the delay between the first surgery and the diagnosis of malignant disease was more than 20 years. Clear cell carcinoma was the most common histology, followed by endometrioid carcinoma. Death was described in 44% of women within a few months of diagnosis. The mainstay of treatment remains extensive surgery and chemotherapy.<sup>11</sup> Endometrial stromal sarcoma can develop on the pre-existing AWSE lesion.<sup>12</sup>

The preoperative diagnosis of AWSE is not always straightforward. Ultrasound scan, as an initial investigation tool, has high detection rate of the lesion. In a large series of 151 AWSE patients, the pre-operative ultrasonography detection rate was 97.4% (147/151 cases). The lesion size detected by preoperative ultrasonography was significantly smaller than that measured intraoperatively by palpation ( $21.6 \pm 20.7$  mm vs.  $30.21 \pm 30.9$  mm;  $p < 0.05$ ). Moreover, only 26.5% (40/151 cases), in AWSE patients the infiltration depth was revealed by preoperative ultrasonography.<sup>13</sup>

Magnetic resonance (MR) imaging is a sensitive technique and has the capability to show haemorrhage and deposition of haemosiderin within the lesion. For patient suspected with AWSE, MR scan during the early and mid-

phase of the menstrual cycle the findings are diagnostic.<sup>14</sup> MR scan should be done as a second line investigation, particularly in deep seated lesions in presence of obesity and multiple scars where US scan is equivocal. A deeply located small lesion in obese patients may be identified with preoperative computerised tomographic-guided needle localisation.<sup>15</sup> Fine needle aspiration cytology may help in diagnosis, however excision biopsy should be done to confirm the diagnosis.<sup>16</sup>

The recommended treatment currently remains complete surgical resection of the mass surgical excision which should include excision with 1 cm of normal tissue around the palpable lump for adequate clearance and prevention of recurrence. Surgical excision results in cure rate of more than 95%. When the aponeurosis is involved, lesion excision might need to be followed by wall closure with the use of a mesh to lessen tissue tension. In a series of 455 surgically treated patients, recurrence was observed in 4.3% of cases.<sup>7</sup> Total excision of the lesion followed by polypropylene mesh closure should be performed, which leads to good post-operative outcomes.<sup>17</sup> It is important to excise the lesion without breaching its capsule, otherwise,

implantation of endometrium into the wound leads to recurrence.

Treatment of recurrent endometrioma can be challenging. Successful treatment of a large recurrent AWSE with combination of an aromatase inhibitor, a progestin, and serial cyst aspiration in a post-menopausal woman has been reported previously.<sup>18</sup> Sclerotherapy with ultrasound-guided ethanol injection has been reported to be effective in isolated cases.<sup>19</sup> The preliminary results of cryoablation therapy in symptom control and reduction of volume of the lesions have been promising.<sup>20</sup>

Although several cases of AWSE have been reported in the literature, steps to prevent this condition, has not been delineated. Irrigation of the wound with high-jet saline solution before wound closure at the time of CS may prevent implantation of the endometrial cells.<sup>21-23</sup>

ASWE is an uncommon clinical condition that can cause diagnostic dilemmas and prolong the morbidity in the patients. Awareness of AWSE following CS or hysterectomy, early diagnosis and complete surgical excision in toto leads to cure and relief of symptoms.

## REFERENCES

- Aytac HO, Aytac PC, Parlakgumus HA. Scar endometriosis is a gynecological complication that general surgeons have to deal with. *Clin Exp Obstet Gynecol*. 2015; 42(3): 292-4.
- Mistrangelo M, Gilbo N, Cassoni P, Faletti R, Miglietta C, Brustia R, et al. Surgical scar endometriosis. *Surg Today*. 2014; 44(4): 767-72.
- Al Shakarchi J, Bohra A. Endometrioma in a virgin abdomen masquerading as an intramuscular lipoma. *J Surg Case Rep*. 2015; 2015(3).
- Cozzolino M, Magnolfi S, Corioni S, Moncini D, Mattei A. Abdominal Wall Endometriosis on the Right Port Site After Laparoscopy: Case Report and Literature Review. *Ochsner J*. 2015; 15(3): 251-5.
- Poismans G, Tolbize N, Gielen F, Lipombi D. Post-Caesarean Abdominal Wall Endometriosis Prevention. *Rev Med Liege*. 2016; 71(4): 193-7.
- Ucar MG, Sanlikan F, Gocmen A. Surgical Treatment of Scar Endometriosis Following Cesarean Section, a Series of 12 Cases. *Indian J Surg*. 2015; 77(Suppl 2): 682-6.
- Horton JD, Dezee KJ, Ahnfeldt EP, Wagner M. Abdominal wall endometriosis: a surgeon's perspective and review of 445 cases. *Am J Surg*. 2008; 196(2): 207-12.
- Vural B, Vural F, Muezzinoglu B. An Abdominal Wall Desmoid Tumour Mimicking Cesarean Scar Endometriomas: A Case Report and Review of the Literature. *J Clin Diagn Res*. 2015; 9(9): QD14-6.
- Rao R, Devalia H, Zaidi A. Post-caesarean incisional hernia or scar endometrioma? *Surgeon*. 2006; 4(1): 55-6.
- Sosa-Duran EE, Aboharp-Hasan Z, Mendoza-Morales RC, Garcia-Rodriguez FM, Jimenez-Villanueva X, Penavera-Hernandez JR. Clear cell adenocarcinoma arising from abdominal wall endometriosis. *Cir Cir*. 2016; 84(3): 245-9.
- Taburiaux L, Pluchino N, Petignat P, Wenger JM. Endometriosis-Associated Abdominal Wall Cancer: A Poor Prognosis? *Int J Gynecol Cancer*. 2015; 25(9): 1633-8.
- Usta TA, Sonmez SE, Oztarhan A, Karacan T. Endometrial stromal sarcoma in the abdominal wall arising from scar endometriosis. *J Obstet Gynaecol*. 2014; 34(6): 541-2.
- Zhang J, Liu X. Clinicopathological features of endometriosis in abdominal wall—clinical analysis of 151 cases. *Clin Exp Obstet Gynecol*. 2016; 43(3): 379-83.
- Solak A, Sahin N, Genc B, Sever AR, Genc M, Sivrikoz ON. Diagnostic value of susceptibility-weighted imaging of abdominal wall endometriomas during the cyclic menstrual changes: a preliminary study. *Eur J Radiol*. 2013; 82(9): e411-6.
- Moulder JK, Hobbs KA, Stavas J, Siedhoff MT. Computed tomography-guided preoperative localization of abdominal wall endometrioma. *Am J Obstet Gynecol*. 2015; 212(2): 248 e1-2.
- Pachori G, Sharma R, Sunaria RK, Bayla T. Scar endometriosis: Diagnosis by fine needle aspiration. *J Cytol*. 2015; 32(1): 65-7.
- Vaz-de-Macedo C, Gomes-da-Costa A, Mendes S, et al. Abdominal Wall Endometriosis Excision with Mesh Closure - Report of Two Cases. *Surg Technol Int*. 2016; 28: 196-201.
- Sasson IE, Taylor HS. Aromatase inhibitor for treatment of a recurrent abdominal wall endometrioma in a postmenopausal woman. *Fertil Steril* 2009; 92(3): 1170 e1-4.
- Bozkurt M, Cil AS, Bozkurt DK. Intramuscular abdominal wall endometriosis treated by ultrasound-guided ethanol injection. *Clin Med Res*. 2014; 12(3-4): 160-5.
- Cornelis F, Petitpierre F, Lasserre AS, Tricaud E, Dallaudiere E, Stoeckle E et al. Percutaneous cryoablation of symptomatic abdominal scar endometrioma: initial reports. *Cardiovasc Intervent Radiol* 2014; 37(6): 1575-9.
- Moazeni-Bistgani M. Recommending Different Treatments as Preventive Measures against Incisional Endometrioma. *J Family Reprod Health*. 2013; 7(3): 105-8.
- Bachir JS, Bachir NM. Scar endometrioma: awareness and prevention. *WMJ* 2002;101(1):46-9.
- Wasfie T, Gomez E, Seon S, Zado B. Abdominal wall endometrioma after cesarean section: a preventable complication. *Int Surg* 2002;87(3):175-7.