Endometrial implants arising in cesarean section scar.

A 22 year old woman with a 4 year history of cesarean delivery presented with swelling and pain at the cesarean scar. The pain was periodical every month and occurred during the menses.

Imaging Findings:

A 22 year old woman presented with swelling and pain at two different sites along the cesarean scar. The pain was periodical every month during the menses. She had one prior cesarean delivery 4 years ago. Clinical examination revealed only one 3 cm tender mass within the cesarian section scar. Blood tests were normal. Ultrasonography scan revealed two relatively well defined hypoechoic lesions in the abdominal wall with central internal hyperechoic area and limited internal vascularity (fig. 1a,b). Magnetic Resonance Imaging (MRI) scan demonstrated two ovoid lesions in the cesarian scar area, one measuring 2.5 cm in the subcutaneous fat and another measuring 3.8 cm within the rectus abdomini muscle (fig.2a,b). Both masses showed intermediate high signal intensity in T1 weighted images (WI) (fig.3a,b), high signal intensity in T2 WI (in relation to adjacent muscles) (fig.4a,b), and high signal intensity after the application of Fat Saturation Techniques (fig. 5a,b). They both enhanced homogeneously after intravenous gadolinium injection (fig 6a,b). The imaging findings were compatible with endometrial implants. The patient underwent operation and the imaging findings were verified.

Discussion:

Endometriosis is the presence of functioning endometrial tissue outside the uterine cavity (1,2). It is estimated to occur in 10% of the female population and occurs almost exclusively in women of reproductive age. Endometrial implants have been found in extrapelvic sites including the bowel, spleen, kidney, diaphragm, lungs, extremeties and abdominal wall (3). The classical presentation of abdominal wall endometriosis (AWE) is of a tender mass within or adjacent to a surgical scar. Cases of abdominal wall scar endometriosis concern deposits in the dermal and subcutaneous tissue, the rectus abdominis muscle, and the rectus sheath. Small intramuscular lesions may not be clinically depicted. The reported incidence of abdominal scar endometriosis following Cesarean section the incidence is 0.03-0.4% (4,5). The pain is usually intermittent and associated with the patient's menstrual cycle but it may be constant in nature. The overlying skin may be hyperpigmented due to deposition of haemosiderin. Ultrasonography is recommended for detecting endometriomas of the ovary, bladder or rectum, but it is less sensitive than MRI for assessment of AWE (6). On ultrasound, a subcutaneous nodule demonstrating relatively irregular borders, a heterogeneous texture with internal scattered hyperechoic echoes surrounded by a hyperechoic ring of variable width, and vascularity at color Doppler imaging may be observed. (2). Ultrasound findings sometimes are not specific. Therefore, infiltration of abdominal wall muscles and subcutaneous tissues is much better assessed by MRI. On MRI, typical features of endometrial implants include high signal intensity at both T1- and T2-weighted sequences persisting at subsequent fat-suppressed T1-weighted images. Gradual variation of signal intensity at T2-
weighted images has been described as shading and is due to chronic bleeding with accumulation of high concentrations of iron and protein in endometrial implants. This specific feature helps differential diagnosis with functional hemorrhagic cysts that do not demonstrate shading (2,7).

In conclusion, there should be a high index of suspicion of scar endometriosis when a woman of reproductive age presents with a painful swelling in the cesarean scar or a history of previous gynecological or obstetrical surgery. Ultrasonography and especially MRI indicate the proper diagnosis. Medical treatment is usually unsuccessful. Wide excision is the treatment of choice.

**Differential Diagnosis List:** Endometrial implants arising in cesarian section scar.

**Final Diagnosis:** Endometrial implants arising in cesarian section scar.

**References:**


Figure 1

Description: An axial T2-WI MRI demonstrates a high signal intensity mass in the subcutaneous tissue (arrow). Origin:

Description: A similar mass is observed within the rectus abdomini muscle. Origin:
Figure 2

**Description:** High signal intensity of the mass on T1-WI. 

**Origin:**
Figure 3

Description: High signal intensity signal of the mass after the application of fat saturation technique.
Origin:

Description: High signal intensity signal of the mass after the application of fat saturation technique.
Origin:
Description: Relatively homogeneous enhancement of the mass after iv gadolinium injection is observed. Origin:
Figure 5

a

Description: An ovoid high signal intensity lesion is demonstrated within the subcutaneous fat. Origin:

b

Description: Another intermediate high signal intensity lesion is observed within the rectus abdomini muscle. Origin: