

Abdominal wall endometriosis - ultrasound research: A diagnostic problem

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Summary

Abdominal wall endometriosis (AWE) is a rare event. Only a few reports in the literature mention *sonographic features* of this clinical entity. We describe a case of a young woman with subcutaneous endometriosis under the surgical scar of a previous cesarean section. Physical examination, ultrasound findings, histopathological features and differential diagnostic problems are discussed. Ultrasound examination, in combination with clinical history, is a useful method in the diagnosis of abdominal wall endometriosis and the avoidance of diagnostic pitfalls.

Key words: Endometriosis; Abdominal wall; Ultrasound.

Introduction

Endometriosis is the presence of endometrial glands and stroma in an extra-uterine site. The ectopic tissue occurs frequently in the minor pelvis, the ovaries, the uterine ligaments, the cervix, the appendix, and the small and large bowel, as well as in the surgical scar of a previous laparotomy.

Abdominal wall endometriosis is rare and occurs in premenstrual women in the surgical scar of a previous cesarean section. It appears by local pain, which may be cyclic [1, 2], during the menses or it may be an occasional event [2, 3]. AWE diagnosis with ultrasound is a quite difficult problem, because several pathological conditions of the abdominal wall have a similar ultrasound appearance.

Case Report

We describe a case of subcutaneous endometriosis which was examined with ultrasound. A 21-year-old woman was admitted to our hospital with acute pain in the right lower quadrant of the abdominal wall. Symptoms had begun seven days earlier but with less intensity. The patient did not complain of pain in the past during the menses. She had a history of a cesarean delivery a year before, and an appendectomy six months before. She had no history of pelvic endometriosis.

Physical examination revealed a painful mass just under the surgical scar of the previous Pfannestiel's incision. Routine blood tests and X-rays were normal.

Ultrasound examination with a 7.5 MHz and 10 MHz transducer showed a sharply defined, solid hypoechoic mass, 20x19x16 mm in size, with scattered internal echoes and a hyperechoic region in the border of the subcutaneous tissue (Figure 1).

Preoperative differential diagnosis included endometriosis, postoperative ventral hernia and granuloma. Due to the acute pain, we did not perform a biopsy, and the patient was taken to the operation room urgently for surgical confrontation.



Figure 1. — Ultrasound (7,5 MHz). Longitudinal view. Solid hypoechoic mass with internal scattered echoes, and a hyperechoic area in the border with the subcutaneous tissue.

The histological examination revealed subcutaneous endometriosis: presence of endometrial glands with characteristic endometrial stroma in the fibromuscular tissue of the lesion (Figure 2).

Discussion

Abdominal wall endometriosis is a rare and comparatively unknown entity, which frequently appears in 0.1% [4] of women who have undergone cesarean section. Typical symptoms (local pain that is associated with the menses), clinical history, physical examination and ultrasound findings make the diagnosis easy.

Sudden symptom initiation, not associated with pain during the menses like in the present case, could create a diagnostic problem.

In the recent literature, only a few reports describe the *sonographic features* of abdominal wall endometriosis [3, 5, 6]. In most of these studies the sonographic descriptions have been confined to pelvic location lesions. In the

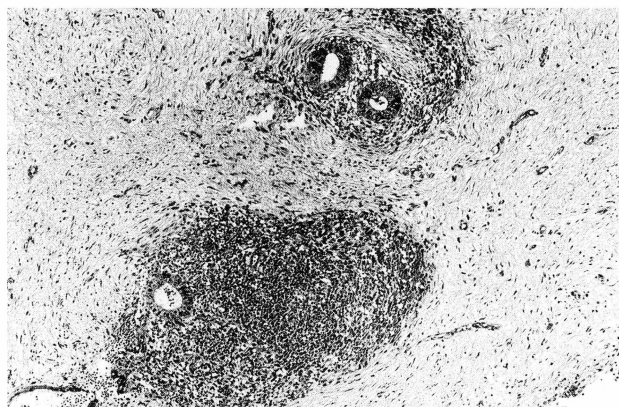


Figure 2. — Notice the presence of endometrial glands with characteristic endometrial stroma in the fibromuscular tissue of the lesion.

past, the sonographic pattern of endometriosis has been characterized as purely cystic, polycystic with few septations, complex combinations of cystic and solid elements, or solid elements [7].

The solid endometrioma is hypoechoic with scattered internal echoes [3]. The sonographic appearance of abdominal wall endometriosis was like the solid lesions that occur inside the peritoneal cavity. An additional sonographic feature in our case was the hyperechoic border, which was interpreted as a stroma reaction in the scar tissue [3].

In case of an abdominal wall mass, the differential diagnosis includes – except for endometriosis – postoperative ventral hernias, abscesses, hematomas, sebaceous cysts, lipomas, hemangiomas, as well as malignancies like lymphomas and sarcomas.

In postoperative ventral hernia the echogenicity is variable, depending on hernial sac contents.

Most abscesses are anechoic to hypoechoic and may appear as either clearly or poorly defined lesions with anechoic or echogenic contents. Gas bubbles, due to infection by gas-forming bacteria, may also be observed [8].

Granulomas may appear as hypoechoic lesions under a previous surgical scar.

The echo texture of the hematoma is variable, from hypoechoic to hyperechoic, depending on its age.

Sebaceous cysts may appear as hypoechoic spherical lesions with well-defined margins.

Lipomas appear as homogenous poorly-defined echogenic lesions, slightly more reflective than the surrounding tissue [8].

Hemangiomas appear as clearly defined lesions of variable echogenicity, depending on type.

In lymphomas, lymph nodes appear as hypoechoic, homogenous, well distinguishable structures. Anechoic areas secondary to necrosis may also be seen [8].

Sarcomas usually appear as relatively poorly reflective mass lesions which may be clearly or poorly demarcated from the surroundings, depending on the time of tumor growth [8].

The treatment of abdominal wall endometriosis is the surgical exception in that it must be adequate in healthy tissues to prevent recurrence [1, 9] and malignant transformation [10].

The histological diagnosis of endometriosis was readily made from the presence of endometrial glands and stroma in the fibromuscular tissue. The most possible pathogenetic mechanism of this type of endometriosis is the implantation of endometrial cells during a surgical operation.

Ultrasound is a useful and economic method for viewing superficial masses and the relationship to the surrounding structures. Although there is no sonographic pattern that characterizes exclusively endometriosis, ultrasound, in combination with the patient's history, can help in the diagnosis of abdominal wall endometriosis, and to exclude other possible pathological conditions.

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