



Rectus abdominis muscle endometriosis

Report of two cases and review of the literature



Ann. Ital. Chir.

Published online 20 Giugno 2012

www.annitalchir.com - pii: S0003469X12018817

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Rectus abdominis muscle endometriosis. Report of two cases and review of the literature

Endometriosis involving the rectus abdominis muscle is very rare; until now, only 19 such cases have been reported in the medical literature since it was first described in 1984 by Amato and Levitt; almost all were associated with previous abdominal surgery such as cesarean section or other operations.

We report two additional cases of this very rare condition presenting with an abdominal mass which was surgically excised with an accompanying margin of normal tissue. Both patients are well and without recurrence.

Endometriosis pain has generally been described as cyclical and this condition usually develops in an old surgical scar. Endometriosis has no pathognomonic imaging findings on CT, MRI or sonography, as its appearance depends on the phase of the menstrual cycle, the proportion of stromal and glandular elements, the amount of bleeding and the degree of surrounding inflammatory and fibrotic response. Surgery is the treatment of choice including 5-10 mm of surrounding healthy tissue as surgical margin, to prevent recurrence.

Our experience is in agreement with the data of the literature. We suggest that endometriosis must be included in the differential diagnosis of a symptomatic mass in the abdominal wall in women with and without a surgical history.

KEY WORDS: Endometriosis, Rectus abdominis muscle, Surgery.

Introduction

Endometriosis is characterized by the presence of functional endometrial tissue outside the uterine cavity¹⁻³. Endometriosis is found predominantly in women of childbearing age. Overall prevalence, including both symptomatic and asymptomatic women, is estimated to be 5-10%¹⁻³.

This condition presents clinically with chronic pelvic pain, dysmenorrhea, dyspareunia, infertility and occasionally symptoms and signs mimicking an acute abdomen¹⁻³. Endometriosis may be intrapelvic or rarely extrapelvic. The extrapelvic implantation of endometrial tissue has been described in virtually every organ. The abdominal wall is a uncommon site of extrapelvic endometriosis, where it usually develops in an old surgical scar¹.

Several pathophysiologic theories for endometriosis have been raised over the years including the implantation or reflux theory, the direct extension theory, the coelomic metaplasia theory, the induction theory, the embryonic rest theory, the lymphatic and vascular metastasis theory and the composite theory combining implantation and vascular and lymphatic metastasis. The transplantation of uterine endometrium through lymphatic, vascular or iatrogenic dissemination best accounts for extrapelvic

Pervenuto in Redazione Gennaio 2012. Accettato per la pubblicazione Aprile 2012.

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endometriosis. Recent studies have also supported a prospective heritability of the disease. The mechanical transplantation theory is responsible for the development of scar endometriosis³⁻⁶.

Endometriosis of the abdominal wall, inguinal canal or surgical scar, when symptomatic, is difficult to diagnose. It is often confused with other pathologic conditions such as suture granuloma, lymphadenopathy, abscess, inguinal hernia, incisional hernia, primary or metastatic cancer, lymphoma, lipoma, hematoma, sarcoma, desmoids tumor and subcutaneous and sebaceous cysts. The final diagnosis is often made only after histological analysis^{3,6}.

Endometriosis involving the rectus abdominis muscle is very rare^{1,2}. Until now, only 19 such cases have been described in the medical literature since it was first described in 1984 by Amato and Levitt²; almost all were associated with previous abdominal surgery such as cesarean section or other operations³.

We present two additional cases of this very rare condition.

Case report

PATIENT 1

A 37-year-old woman presented with a mass in the right lower abdominal quadrant. The patient report the appearance of a swelling 1 months previously. She had no associated gastrointestinal, menstrual or constitutional symptoms. There was a prior medical history of caesarean section 4 years before. There was no previous history of endometriosis. Physical examination revealed a well-healed Pfannenstiel incision. A smooth, firm, elastic, ovoid mass measuring 3 x 2 cm could be palpated. The remaining results of the abdominal and pelvic exam-

ination were normal. Clinically, the diagnoses of ventral hernia, desmoid tumor, and granuloma were considered. High resolution ultrasound of the abdominal wall showed an ill-defined and inhomogeneous hypoechoogenic mass in the distal portion of the right rectus abdominis muscle, 35 mm in greatest diameter, which was well vascularized at the periphery of the lesion and with some small vessels running centrally on power Doppler. At surgery, a vascular mass was excised from the right abdominal wall with an accompanying margin of normal tissue. No connection with intra-abdominal structures was identified. The patient's postoperative course was uneventful and she was discharged in second postoperative day. Pathologically, the mass consisted grossly of highly vascular and fibrotic tissue. Microscopic examination showed extensive areas of endometriosis, with small glands containing adjacent endometrial stroma (Fig. 1). Estrogen and progesterone receptors were positive. No recurrence of endometriosis was found clinically after 32-months follow-up.

PATIENT 2

A 44-year-old woman presented with a painful mass in the left lower abdominal quadrant that had been present for 1 year. She reported that the size of the mass seemed to vary with her menses and it had become more painful during her current cycle. Her prior medical history included a caesarean section 3 years before. There was no previous history of endometriosis. Physical examination showed a well-healed Pfannenstiel incision and a firm, ovoid, smooth, painful mass measuring 1.5 x 1 cm in the left lower abdominal quadrant. Clinically, the diagnoses of ventral hernia, desmoid tumor, granuloma and endometrioma were considered. Imaging evaluation started with a

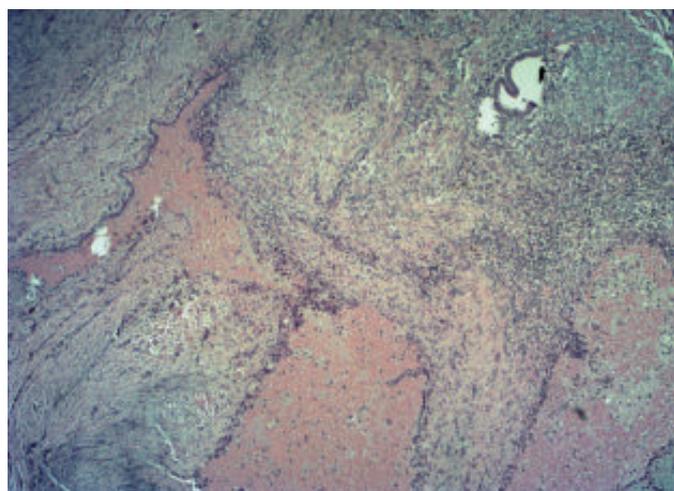


Fig. 1: Low power view of the tissue sample of the mass in the rectus abdominis muscle, showing the nests of endometriosis in a fibrous background (hematoxylin-eosin, 100X).

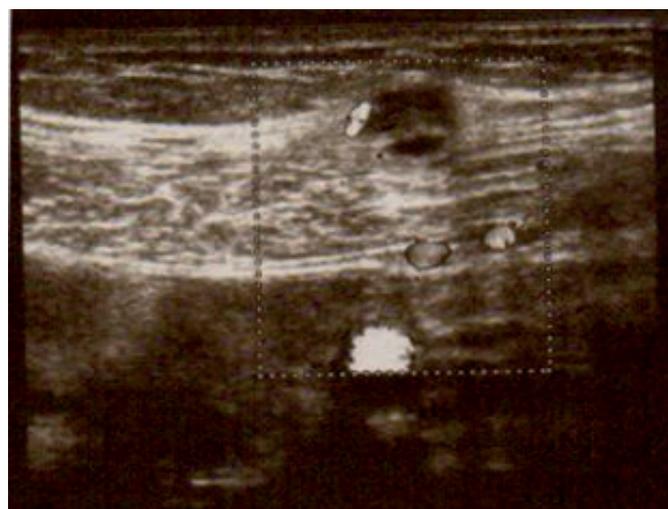


Fig. 2: Ultrasonographic image of the hypoechoogenic endometriosis mass in the left lower rectus abdominis muscle.

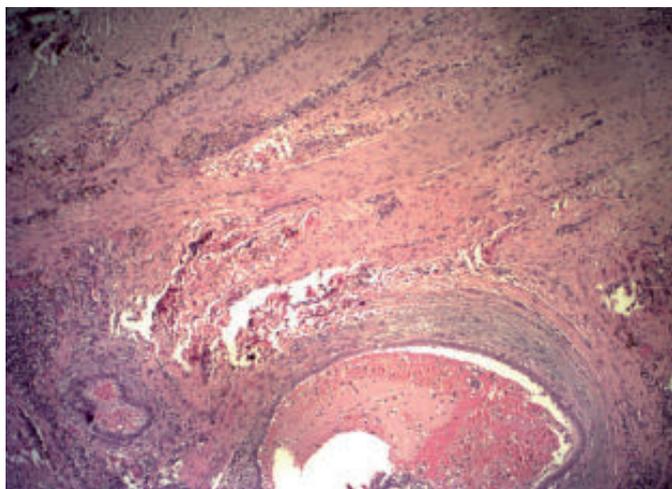


Fig. 3: Endometrial glands and stroma at histological analysis of the lesion within rectus muscle with surrounding fibrosis(hematoxylin-eosin, 100X).

high resolution ultrasound of the abdominal wall showing an ill-defined and hypoechoic mass in the distal portion of the left rectus abdominis muscle, 15 mm in greatest diameter (Fig. 2). The mass was situated lateral to the Pfannenstiel-scar of the caesarean section. The MRI scan showed no involvement of the abdominal cavity. At surgery a vascular mass was excised from left abdominal wall with an accompanying margin of normal tissue. Histological examination revealed areas of typical endometrial glands surrounded by stroma and bordered by vessels typical of endometriosis (Fig. 3). The patient's postoperative course was uneventful and she was discharged the same day of surgery. No recurrence of endometriosis was found clinically after 3-months follow-up.

Discussion and commentary

Endometriosis is a common gynecological disease with an estimated prevalence of 8-15%. Abdominal wall is a rare site of localization, usually reported in a previous surgical scar. Several theories have been proposed for the development of extrapelvic endometriosis including metaplasia, retrograde menstruation, venous or lymphatic metastasis and mechanical transplantation into the scars at the time of surgery².

General pathologic findings of endometriosis probably depend on the duration and depth of penetration of the lesions. An implantation may change in appearance during the menstrual cycle, becoming more swollen and congested during menses and bleeding in some cases. Endometriosis pain has generally been described as cyclical; however many reports in literature frequently refer no cyclic symptoms in association with abdominal wall location, thus making it difficult to make a preoperative diagnosis³. The rectus abdominis muscle endometriosis

caused continuous cyclic pain and changing in appearance during menstrual cycle only in one of our two patients.

Although most abdominal wall locations are confined to surgical scar or tracts resulting from previous surgical procedures, endometriosis of the abdominal wall may also arise in the absence of a history of surgical operations (20% of patients)^{2,3}. The caesarean section is the surgical procedure most frequently associated with abdominal wall endometriosis with an incidence that is estimated to be between 0.03% and 1%. During a caesarian section, endometrial cells may escape through the incision in the uterus and implant themselves within the abdominal wound². Probably the ectopic implant at the time of cesarean section requires a combination of several factors such as genetic and immunological ones². Our 2 patients had previous caesarean section as the majority of patients reported in literature.

Endometriosis has no pathognomonic imaging findings on CT, MRI or sonography, as its appearance depends on the phase of the menstrual cycle, the proportion of stromal and glandular elements, the amount of bleeding and the degree of surrounding inflammatory and fibrotic response^{1,7}. Our patients were subjected to sonography, while CT scan and MRI scan were not performed. Pelvic MRI was performed in one case to exclude pelvic endometriosis. High resolution ultrasound is a simple, inexpensive and safe method and was considered sufficient to indicate surgery. Otherwise CT and MRI scan are expensive and often inconclusive. FNA had been reported to be useful in excluding the possibility of malignancy but seems to be inconclusive in formulating the diagnosis in 75% of cases. Moreover FNA has been associated to an increased risk of recurrence². For these reasons we did not perform FNA. The serum level of CA-125 can be slightly increased² but we did not perform it because endometriosis was unsuspected.

Surgery is the treatment of choice including 5-10 mm of surrounding healthy tissue as surgical margin, to prevent recurrence^{2,3,8}. Our 2 patients were submitted to wide excision and they had no recurrences; a patch grafting was not necessary.

Conclusions

Our experience is in agreement with the data of literature. We suggest that endometriosis must be included in the differential diagnosis of a symptomatic mass in the abdominal wall in women with and without a surgical history.

Riassunto

L'endometriosi del muscolo retto dell'addome è una condizione molto rara; sinora, solo 19 casi sono stati

riportati in letteratura dal primo caso descritto nel 1984 da Amato e Levitt; in quasi tutti i casi l'endometriosi era associata con un precedente intervento chirurgico addominale come un taglio cesareo o altri interventi. Presentiamo 2 ulteriori casi di questa rara condizione giunti alla nostra osservazione con una massa addominale e sottoposti a escissione chirurgica con un margine di tessuto sano circostante. Entrambe le pazienti stanno bene e non hanno attualmente segni di recidiva.

Il dolore nell'endometriosi è generalmente descritto come ciclico e questa condizione si sviluppa generalmente in una vecchia cicatrice chirurgica. L'endometriosi non presenta immagini patognomiche alla TC, RMN o ecografia in considerazione del fatto che il suo aspetto dipende dalla fase del ciclo mestruale, dalla proporzione di elementi stromali e ghiandolari, dalla entità del sanguinamento e dal grado di risposta infiammatoria e fibrotica circostante. La chirurgia è il trattamento di scelta comprendendo un margine di 5-10 mm di tessuto sano circostante in modo da prevenire la recidiva.

La nostra esperienza è in accordo con i dati della letteratura. Noi riteniamo che l'endometriosi debba essere inclusa nella diagnosi differenziale di una massa sintomatica della parete addominale nelle donne sia in presenza che in assenza di precedenti chirurgici.

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