

Endometriosis mimicking soft tissue tumors: Diagnosis and treatment

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Summary

The clinical manifestations, the radiologic appearance and the treatment of four women with extragenital endometriosis of the abdominal wall are presented. In two patients endometriosis was found adherent with the structures of the inguinal canal and in the other two the tumors infiltrated structures of the abdominal wall. Symptoms included cyclical pain and palpable subcutaneous masses fixed to the surrounding tissues. Computed tomography and magnetic resonance imaging failed to differentiate the lesions from other soft tissue tumors. Resection to healthy tissue margins is the treatment of choice, in order to avoid local recurrence.

Key words: Endometriosis; Extragenital.

Introduction

The presence of endometrial glands and stroma outside the uterine cavity and musculature defines endometriosis. It is a common gynaecological disease, affecting 15% of fertile and up to 50% of infertile women. Its occurrence outside the usual ovarian location is termed extragenital or extrapelvic endometriosis [1]. Surgical scars, the umbilicus, groin, gastrointestinal tract, peritoneum, omentum and urinary tract represent the commonest anatomic locations of extragenital endometriosis. The surgical interest of the disease comes from the fact that endometriosis may mimic soft tissue malignancies and that malignant transformation of endometriosis tissue is possible and must be ruled out. In our study the diagnosis, treatment and outcome of four patients with extrapelvic endometriosis are presented.

Material and Methods

The department's archives of the past 15 years were searched and among patients admitted for treatment of soft tissue tumors, four cases (less than 1%) of extragenital endometriosis were found. Preoperative findings (clinical and radiologic), treatment and outcome are illustrated in Table 1.

Clinically, the age of the four patients ranged between 29 and 33 years, with a mean of 31 years. The patients presented with gradually increasing subcutaneous masses and pain. In case 1, the patient presented with a palpable mass in the right groin, without any pain. In case 3, the patient presented with a 2-year history of cyclical periumbilical pain, without any palpable mass. In cases 2 and 4, both patients presented with palpable masses (in the groin and right lower abdomen, respectively) and hypogastric pain.

Computed tomography (CT), ultrasonography (US), and magnetic resonance imaging (MRI) were used for determining the location, size and solid or cystic features of the subcutaneous tumors. The masses were located in the inguinal canal (cases 1 and 2) and within the right rectus sheath (cases 3 and 4), invading the rectus abdominal muscle and the posterior and anterior fascia, respectively. In case 1, a solid tumor (1.8 cm) was located subcutaneously in contact with the extraperitoneal portion of the round ligament (Figure 1) and a continuing fluid-like spindle shaped collection (1 x 4 cm in diameter) was located in the inguinal canal. In cases 2 and 4 solid tumors (2.5 cm and 3 x 4 cm, respectively) were described. In case 3, a lesion mimicking a soft tissue tumor with mixed consistency (solid and cystic) 3 x 4 cm in diameter was demonstrated. Imaging characteristics were neither sensitive nor specific for differentiating endometriosis from other soft tissue tumors.

Surgical resection of the tumors was performed with safe margins (macroscopically healthy tissue). In case 1, the inguinal segment of the round ligament was also resected. In case 2, the mass was excised but not within safe histological margins. In cases 3 and 4, abdominal wall full thickness resection was needed to accomplish safe margins.

The histology of all surgical specimens was diagnostic for endometriosis (Figure 2). It is useful to mention that preoperative fine needle aspiration biopsy was not performed.

During follow-up, all patients had an uneventful postoperative course, with the exception of case 2 in which the patient presented after two years with a painful mass in the right groin (local recurrence) thus a complementary resection in safe margins was performed.

Discussion

Extragenital endometriosis has an estimated prevalence of 8.9%, according to a current review from a Glasgow hospital [1]. It seems to affect almost every organ and system, except the rare location of the spleen and heart.

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Table 1. — Preoperative and postoperative patient characteristics.

	age	Clinical features	Imaging findings	Treatment	Outcome
1	29 yrs	Palpable mass in the right groin	Solid subcutaneous mass 1.8 cm & fluid collection of 1 x 4 cm (CT & MRI)	Excision of the mass and the inguinal segment of the round ligament	Uneventful
2	31 yrs	Cyclical hypogastric pain & palpable tumor in the right groin	Solid mass 2.5 cm (CT)	Resection of the lesion	Local recurrence after 2 years. Complementary excision. Uneventful
3	31 yrs	Cyclical periumbilical pain	Mass 3 x 4 cm with cystic and solid features in the right rectus sheath. (CT & MRI)	Full thickness excision of the tumor	Uneventful
4	33 yrs	Cyclical hypogastric pain & palpable tumor in the lower abdominal wall	Solid lesion 3 x 4 cm in the right rectus sheath	Full thickness excision of the tumor	Uneventful

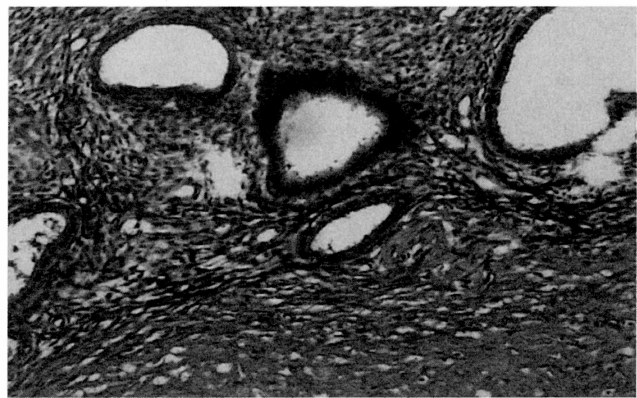


Figure 1. — Abdominal CT scan showing a solid subcutaneous lesion 1.8 cm (arrow) with contrast enhancement in contact with the extraperitoneal portion of the round ligament.

Figure 2. — Histological section of the endometriotic focus showing ectopic endometrial glands and stroma surrounded by muscle tissue (hematoxylin-eosin, x 100).

The currently used classification system was proposed by Markham *et al.* [2]. This divides extragenital endometriosis into four classes: *class I*, involving the intestinal tract; *class U*, involving the urinary system; *class L*, involving the lungs and thoracic cage; and *class O*, involving “all other sites”.

The rarer sites reported in the literature are the umbilicus, abdominal wall incisions, episiotomy scars, biceps muscle, bone, peripheral nerves and inguinal canal [3].

Swellings over previous abdominal incisions, palpable lumps in the skin and groin, rectal bleeding and abdominal cyclical pain, augmented during menstruation, are the commonest symptoms patients seek medical advice for. Three of our cases presented with pain, localized in the groin (case 2) and the abdominal wall (cases 3, 4) and three of four patients palpated a mass in the right groin (cases 1 and 2) and right lower abdomen (case 4).

An interesting fact is that endometriosis is considered to be a possible preneoplastic condition. Adenocarcinoma arising from endometriosis in caesarean scar incisions [4], extrauterine müllerian adenocarcinoma [5], ovarian clear cell carcinomas [6] and many other case reports published in the literature are examples of the malignant

potentiality existing in endometriosis. Malignant transformation of endometriosis is still not a well understood process. Probably, mutations in tumor suppressor genes (K-ras, PTEN, etc.) hypothetically are the link between endometriosis and malignant tumors, but these molecular mechanisms remain to be clearly defined [7].

Imaging methods (US, CT and MRI) are not as specific and sensitive in differentiating these lesions from soft tissue tumors. Histology remains the cornerstone in definitively diagnosing endometriosis. Fine needle aspiration biopsy for extragenital endometriosis is a safe and sensitive diagnostic tool for extragenital endometriosis [8, 9]. Endoscopic ultrasound-guided FNA biopsy of intestinal endometriosis was recently published [10, 11].

The treatment is surgical excision of the entire lesion with margins in healthy tissue in order to prevent recurrence. In case 2, the young woman presented two years after resection of right inguinal endometriosis with a relapse in the same region.

In conclusion, extrapelvic endometriosis is a rare entity a surgeon can deal with. It should be suspected in every young woman with lumps or swellings in the skin, abdominal wall or previous incisions and a history of

cyclic pain and perhaps signs of recurrent rectal bleeding. A high index of suspicion leads to appropriate excision of the entire lesion with safe margins, avoiding any recurrence and keeping in mind the possibility of malignant transformation. A referral to a gynecologist has to be done postoperatively for further evaluation of pelvic endometriosis.

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