Abdominal Wall Endometriosis: A Diagnostic Dilemma for Surgeons

Three Case Reports

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Key Words

Endometriosis · Abdominal wall ·
Polytetrafluoroethylene patch grafting

Abstract

Objective: To report 3 cases of endometriosis of the abdominal wall, a disease which is unfamiliar to general surgeons because of the potential pitfalls in its diagnosis. **Clinical Presentation and Intervention:** Three patients were referred to our general surgery clinic for abdominal masses. Incisional hernia and an abdominal mass were initially suspected in 2 patients, while a preoperative diagnosis of a rectus abdominis hematoma was made in the third because she had no history of previous surgery. Pain was a remarkable complaint in only one of the present cases. Abdominal wall endometriosis was diagnosed only upon histological examination postoperatively. In all cases, ultrasonography revealed hypoechogenic masses, and computed tomography showed that these masses had spiculations, and macroscopic views of the resected masses revealed well-demarcated margins without peritoneal involvement. All patients were treated with wide radical resections followed by polytetrafluoroethylene patch grafting. They

were discharged from hospital on either the 2nd or the 3rd postoperative day uneventfully, and during follow-up there were no signs of pelvic endometriosis, as confirmed by ultrasonography, CA 125 measurement, gynecological consultation and examination. **Conclusion:** Since the diagnosis of scar endometrioma is rarely established prior to surgery, endometriosis should be included in the differential diagnosis of masses on the abdominal wall.

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Introduction

Endometriosis occurs when ectopic endometrial tissue, which can respond to ovarian hormonal stimulation, grows outside the uterus. Endometrioma in a surgical scar develops in 0.1% of women who have undergone cesarean section, and 25% of these women have concomitant pelvic endometriosis [1]. Its differential diagnosis in the abdominal wall includes abscess, lipoma, hematoma, sebaceous cyst, suture granuloma, inguinal hernia, incisional hernia, desmoid tumor, sarcoma, lymphoma and primary and metastatic cancer [2]. Umbilical or inguinal canal swelling, appendicitis, intestinal obstruction, rectal

Fig. 1. Characteristic spiculation of abdominal wall endometriosis on CT.

Fig. 2. The macroscopic view of the resected ectopic endometrial tissue with smooth peritoneal surface.

bleeding, or nonspecific urinary symptoms may all hide endometriosis as an underlying cause. Endometriosis is rarely seen by general surgeons and is often diagnosed on histological examination postoperatively [3]; because of the large number of potential pitfalls in its diagnosis, we present 3 cases as seen from the perspective of a general surgeon.

Case Reports

Case 1

A 27-year-old woman was referred to our general surgery clinic because of a $7 \times 5 \times 4$ cm abdominal mass with cyclic pain beginning few days prior to menses. Six years before admission, she had had a myomectomy without hysterectomy. Computed tomography (CT) revealed a spiculated mass resembling desmoid tumor within the right rectus abdominis muscle with indentations of peritoneum.

Case 2

A 37-year-old woman with an initial diagnosis of a $7 \times 7 \times 4$ cm rectus hematoma within the left rectus abdominis muscle underwent laparotomy. The lesion had appeared 14 months prior to admission, and she had had no previous surgery.

Case 3

A 42-year-old woman was surgically treated because of a presumptive diagnosis of incisional hernia that presented clinically as an abdominal mass of 1 year's duration. She had had a cesarean section 8 years before. There was a $4 \times 3 \times 3$ cm spiculated mass within the right rectus abdominis muscle.

In all cases, ultrasonography (USG) revealed hypoechogenic masses, and CT showed that these masses had spiculations (fig. 1).

Fig. 3. The microscopic view of endometriosis demonstrating endometrial glands and stroma within skeletal muscle fibers of rectus abdominis muscle which are shown by the black arrow. HE. $\times 400$.

Macroscopic views of the resected masses revealed well-demarcated margins without peritoneal involvement (fig. 2). All cases were confirmed to be endometriosis histopathologically (fig. 3) and were treated with polytetrafluoroethylene patch grafting following wide radical resections. Patients were discharged from hospital on either the 2nd or the 3rd postoperative day uneventfully. In the postoperative follow-up, there were no signs of pelvic endometriosis, which was confirmed by USG, CA 125 measurement, gynecological consultation and examination.

Discussion

Different pathophysiological theories concerning the origins of endometriosis have been proposed, including the implantation or reflux, direct extention, coelomic metaplasia (claiming that endometriosis develops from metaplasia of peritoneum), induction (suggesting that sloughed endometrium results in endometriosis), embryonic rest (claiming a specific stimulus to a Mullerian origin cell nest produces endometriosis) and lymphatic and vascular metastasis [4]. In one of our patients (case 2), spontaneous primary endometriosis was due to vascular or lymphatic metastasis. Abdominal wall endometriosis can also arise in a male from the prostatic utricle, which is a remnant of the uterus from the time when the male and female urogenital systems in the embryo are separated between the 8th week and the 4th month [5].

Abdominal wall endometrioma was also reported following laparoscopic surgery in a trocar tract [6]. Since the use of laparoscopic procedures is increasing in number both in gynecologic and general surgery procedures, the general surgeon should be able to diagnose and treat endometriomas arising in laparoscopic trocar tracts. To prevent abdominal wall endometriosis after surgical procedures, we believe that abdominal wall wound should be cleaned thoroughly and irrigated vigorously with high-jet saline solution before closure.

Symptoms of scar endometriosis are nonspecific and may accompany abdominal pain even resembling an acute abdomen at time of menstruation, but noncyclical symptoms are more pronounced. Severe pain can be caused by ectopic endometrial growths which develop an autonomic and sensory innervation and can contribute not only to symptoms but also to maintenance of the ectopic growths. New treatment modalities aimed at reducing vascularization of ectopic endometrial growths represent additional new avenues for treatment, especially in pelvic endometriosis [7]. Pain was a remarkable complaint in only one of the present patients. She (case 1) had cyclic pain which helped in establishing the diagnosis.

Patients with endometriosis in a surgical scar are often referred to general surgeons because of clinical suspicion of incisional hernia, as was the case with patient 3. In another, an abdominal mass was initially suspected. Although there are very few cases reported in the literature in whom a surgical history was absent [8], one of our patients (case 2) had no history of previous surgery, which led to preoperative diagnosis of a rectus abdominis hematoma.

Fine-needle aspiration biopsy can be a reliable diagnostic tool for evaluation of subcutaneous abdominal wall masses. It can detect the presence of endometrial glands, endometrial stroma and hemosiderin pigment, so that hormonal therapy can be initiated, thereby avoiding unnecessary surgery in selected cases [9]. Unfortunately we did not perform fine-needle aspiration biopsy in our patients, since we did not suspect endometriosis preoperatively.

Ultrasonographic features of endometrioma include a hypoechoic inhomogeneous texture with internal hyperechoic echoes in addition to irregular margins, often spiculated, infiltrating the adjacent tissues with a hyperechoic ring [10]. In our 3 patients, USG revealed hypoechoic masses and CT showed that these masses had spiculations, and the macroscopic views of the resected masses revealed well-demarcated margins without peritoneal involvement. These common features were remarkable and similar to previously reported cases and helped to establish a correct diagnosis [10].

Malignancy of ectopic endometrial tissue in surgical scars has also been reported [11]. Wide excision of endometrioma in the present cases enabled us to gain clear surgical margins to avoid leaving the rest of the ectopic tissue. All of our patients were treated with polytetrafluoroethylene grafting following a wide radical surgical excision, which is the treatment of choice for abdominal wall endometriosis [2, 4].

Postoperative follow-up with a gynecologist is recommended since a concomitant pelvic endometriosis may be encountered in patients with abdominal wall endometriosis in a surgical scar [1, 3]. CA 125 determination, a marker found on derivatives of the coelomic epithelium, may be useful to predict the presence and recurrence of endometriosis [12]. In the present cases, gynecological examinations and CA 125 levels during the follow-up period were within normal limits, and there were no signs of pelvic disease, also in the case with spontaneous endometriosis.

Conclusion

This report highlights 3 cases of endometriosis of the abdominal wall, which is generally unfamiliar to general surgeons. Since it is often diagnosed only upon histological examination postoperatively, it should be emphasized in the differential diagnosis of abdominal wall masses.

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