Acta Scientific Women's Health (ISSN: 2582-3205)

Volume 6 Issue 11 November 2024

Research Article

Extensive Abdominal Wall Endometriosis: Clinical, Paraclinical Features and Surgical Management of 9 Cases

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Received: June 07, 2024

Published: October 27, 2024

Abstract

Background: Abdominal wall endometriosis is a particular and rare clinical entity that conventionally occurs in the scar after obstetric or gynecological intervention, characterized by recurrent abdominal pain and parietal lump. The surgical treatment is not always evident and requires a skilled surgeon. Our aim is to investigate clinical, para clinical features and surgical management.

Methods: We retrospectively analyzed the clinical approach, preclinical tools and surgical management in 9 women, who were treated by the same surgeon, between January 2012 and December 2022.

Results: The mean age was 38.6 years (range: 25-46), abdominal mass and recurrent pain were the most frequent symptoms. Eight patients had previously undergone cesarean section, and one patient had undergone myomectomy. Ultrasound was done for all patients, computed tomography for 2 cases and MRI for 4 women. Surgical excision was performed for all patients; 3 patients needed the use of abdominoplasty techniques and 5 patients required mesh repair. The histopathology confirmed the diagnosis of abdominal wall endometriosis, and no case of recurrence was noticed up to now.

Conclusion: Parietal endometriosis is a particular clinical condition suspected in a woman who endured abdominal pain with a history of abdominal and pelvic surgery. In case of extensive abdominal wall endometriosis, a challenging condition requires a mastery of abdominoplasty techniques.

Keywords: Abdominal Wall Endometriosis; Cesarean Section; Extensive Abdominal Wall Endometriosis; Parietal Endometriosis; Abdominoplasty

Introduction

Endometriosis is the presence of ectopic endometrial cells and stroma outside the uterine cavity, it is divided into intra pelvic and extra pelvic endometriosis, and the most common localizations of intra pelvic are the ovaries, broad ligament, uterosacral ligament, pelvis peritoneum and fallopian tubes. In the extra pelvic endometriosis, the most common sites are abdominal wall, thoracic cavity, brain and musculature.

Abdominal wall endometriosis is the infiltration of any abdominal layer by ectopic endometrial cells, and can be classified as spontaneous abdominal wall endometriosis is very rare and scar endometriosis that take place at the site of surgical incision after obstetric or gynecological surgery. This challenging condition is characterized by abdominal mass and chronic pain. Ultrasound and MRI of the pelvis and abdominal wall are the cornerstones of diagnosis. Wide surgical excision is the curative therapy of abdominal wall endometriosis but management of extensive abdominal wall require an experienced surgeon.

The aim of this paper is to report 9 cases of abdominal wall endometriosis, including the diagnosis, surgical history of the patient and particularities of each surgical management.

Materials and Methods

This is a retrospective and observational case study of 9 patients with histopathological confirmation of abdominal wall endometriosis, who underwent surgery by the same surgeon between January 2012 and December 2022.

We analyzed the patients' medical records including all demographic and clinical features, the previous surgical interventions, para clinical tools used for diagnosis and type of surgery performed for the management of abdominal wall endometriosis and the extensive form, and post-operative outcome.

Results

Nine patients were included in our study. The mean age was 38, 6 years (range: 25-46). Eight patients (88.9%) had previously undergone cesarean section and 1 patient (11.1%) had undergone a laparotomy for myomectomy. The main symptoms were recurrent pelvic pain and the presence of a mass in all patients.

A total of 8 patients (88.9%) were receiving contraceptive pills, 7 patients (77.8%) were taking progestin and LH-RH analogues had been taken by 3 patients (33.3%). 4.6 years was the delay in diagnosis; the interval time between the consultation of a patient with abdominal wall endometriosis and surgery.

The preoperative diagnosis was made by ultrasound in all patients, the diameter of the mass varied between 3 cm and 10 cm. One localization was found in 3 patients, two localizations in 3 patients and three localizations in the remaining patients. MRI was performed on 4 patients; to give more details on adenomyosis, pelvic endometriosis and given more information on parietal extension, computed tomography was performed in 2 cases.

In all cases, surgical excision of the endometriosis with 1 cm of healthy margin tissue was performed. Abdominoplasty was used for 3 patients (33.3%) with extensive abdominal wall endometriosis and mesh was used for 5 cases (55.6%). Surgical exploration of the 9 patients showed a wider lesion than the radiology description, aponeurosis involvement was in all 9 cases, rectus abdominis in 6 cases (66.7%), peritoneum lesion in 3 cases (33.3%) and omentum in one case (11.1%).

The follow up showed two patients developed a seroma with uneventful evolution and 1 patient was reoperated for granulomatous lesion around the mesh after one year. No case of recurrence was registered up to now.

Discussion

In cases involving the aponeurosis, where there may be tension in the suture line or in cases of nodules larger than 50 mm, extensive mobilization of the aponeurosis placement of a polypropylene prosthesis may be recommended. This may be essential for successful tension-free closure of the abdominal wall and prevent postoperative hernia formation [1,2]. According to recent consensus of nomenclature for defining the planes for the anterior abdominal wall mesh reconstruction, there are generally 5 different anatomical compartments for mesh placement: subcutaneous, interposition, retro-rectal, preperitoneal and intra-abdominal [3]. Although the application of synthetic mesh may cause an increased risk of complicated wound infection, synthetic mesh infection and erosion [4], in our study we related a granulomatous lesion on mesh reoperated with good evolution.

The gynecological surgeon should be familiar with some basic abdominoplasty techniques and use of skin/musculocutaneous flaps. Reconstruction of the abdominal wall and wound closure is usually dictated by the extent of resection and the possibility of subsequent surgical intervention. Vascularization lymphatic drainage and sensory innervation must always be considered to ensure survival of the transplanted flaps. Blood supply to the lower abdomen which is particularly compromised during surgery is provided by perforating branches of the inferior epigastric vessels, the circumflex iliac artery and the external pudendal artery. Secondly, much effort must be made to minimize wound closure tensions through optimal flap design, extensive undermining and suturing technique. When planning the abdominal wall reconstruction, we considered using a rectus abdominis muscle flap, an anterolateral thigh musculocutaneous flap or partial abdominoplasty. Finally, after extensive perforator-vessel-sparing skin undermining, we were able to successfully perform a partial abdominoplasty technique with tension-free skin closure. We must mention that such extensive skin flap dissection may be associated with higher local complication rate, as, hematoma, seroma, wound dehiscence and infection. Unfortunately, our case series presented 2 cases of seroma [5,6].

Table 1: Clinical and demographic characteristics of the patients.

Characteristics	Number (%) or mean ± standard deviation
Age (years)	38.6 years
Parity	1.2
Operation history	C-section: 88.9% Myomectomy: 11.1%
Symptoms	Pain: 100% Mass: 100%
Mass Size (cm)	6.5
Endometriosis Location	Aponeurosis: 100% Rectus abdominis muscle: 66.7% Peritoneum: 33.3% Greater omentum: 11.1%
Mesh use	55.6%
Abdominoplasty techniques use	33.3%

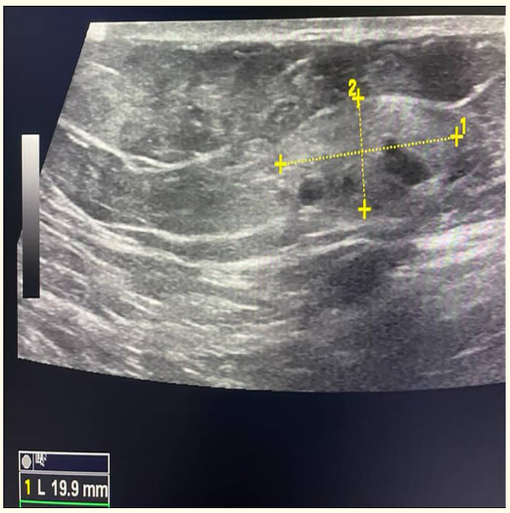
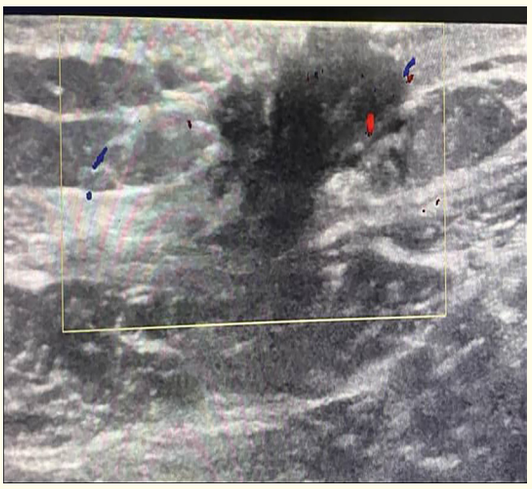


Figure 1: Ultrasound imaging exam showing a hypo echoic solid mass in the abdominal wall.

Figure 2A



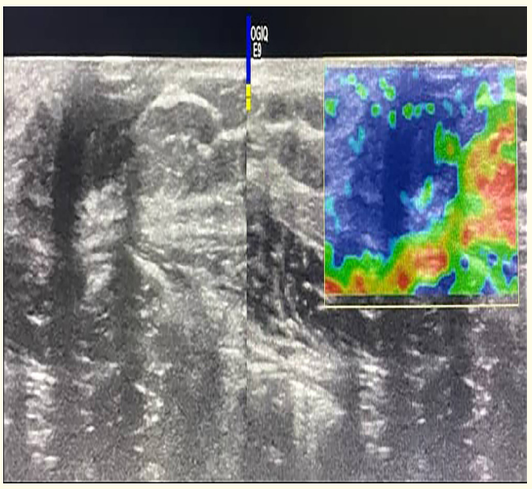


Figure 2B

Figure 2A and 2B: Ultrasound imaging exam showing a hypo echoic solid mass with ill-defined margins, Doppler shows peripheral vascularization.

Figure 3A

Figure 3B

Figure 3A and 3B: MRI shows an anterior parietal nodule in T2 hyposignal.

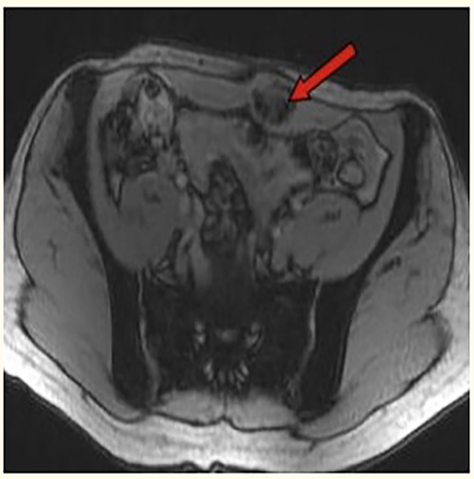


Figure 4: MRI shows an anterior parietal nodule in hyposignal in Gradient echo sequences.

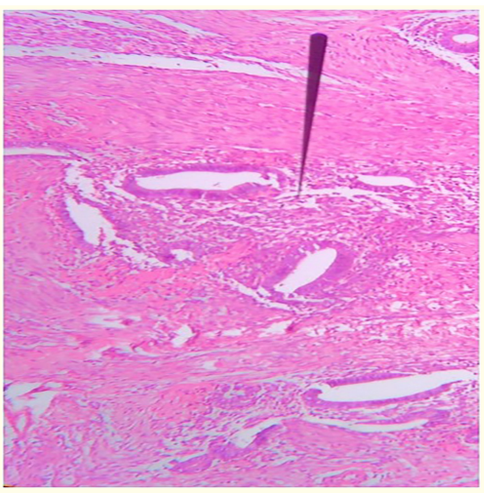


Figure 5A

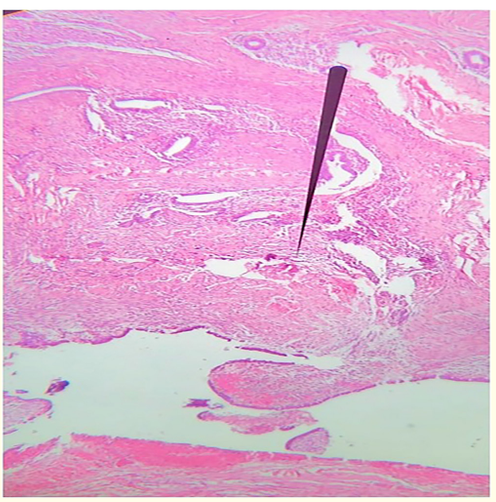


Figure 5B

Figure 5A and 5B: Hematoxylin and eosin-stained section of excised tissue showing endometrial glands and fibrous stroma.

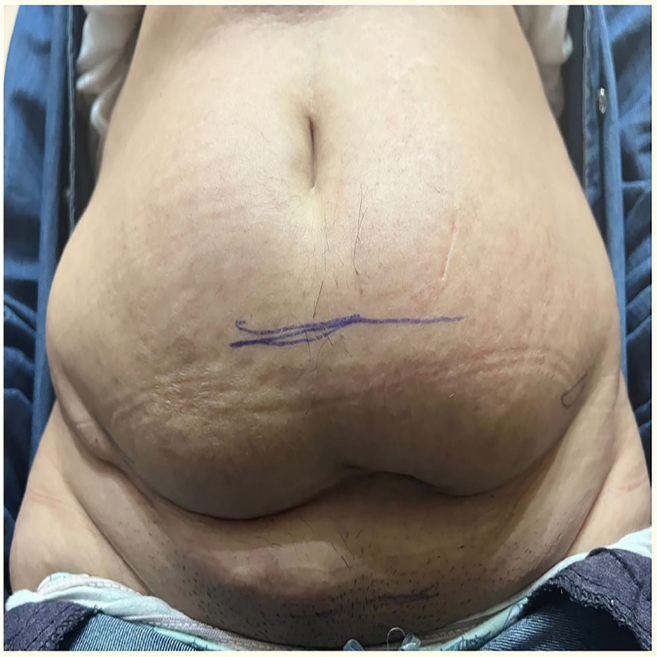


Figure 6A

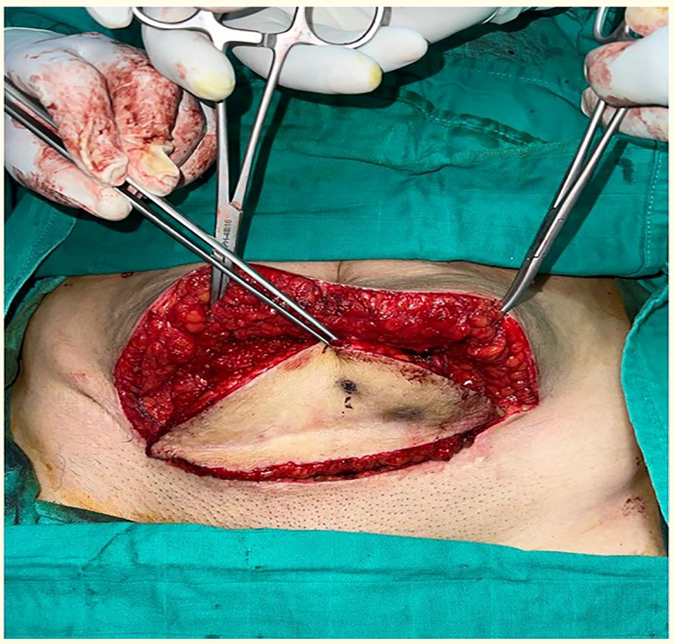


Figure 6B

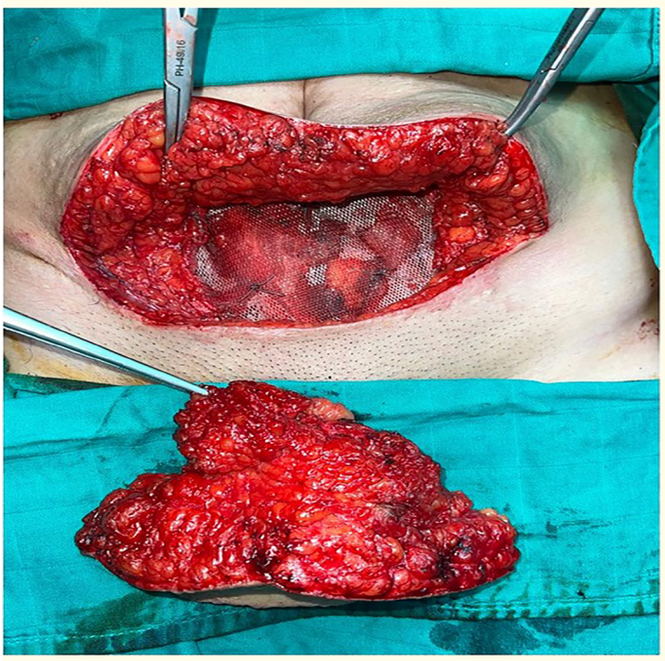


Figure 6C

Figure 6D

Figure 6A, 6B, 6C and 6D: Huge parietal endometriosis affecting the aponeurosis, abdominis rectus muscle, posterior aponeurosis, peritoneum and omentum. Abdominal wall reconstruction using polypropylene mesh.

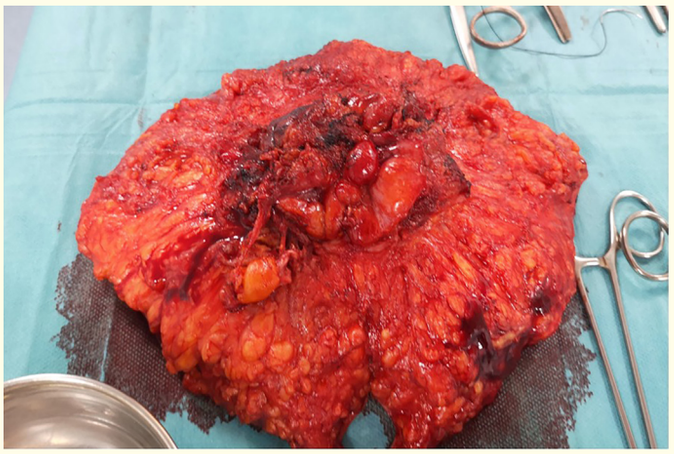


Figure 7A

Figure 7B

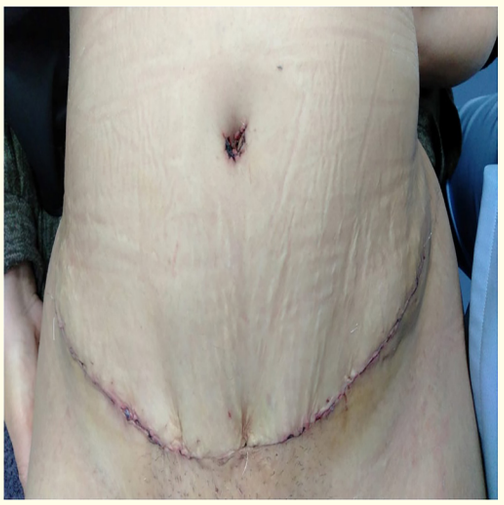


Figure 7C

Figure 7A, 7B and 7c: Large AWE nodules affecting the aponeurosis, abdominis rectus muscle, posterior aponeurosis, preperitoneal fatty tissue and peritoneum. Abdominal wall reconstruction using Abdominoplasty technique.

Conclusion

Parietal endometriosis is a rare clinical entity. The diagnosis of abdominal wall endometriosis is based on clinical examination, patient history, ultrasound and MRI. Surgical excision is the mainstay of treatment and may require consultation with a plastic surgeon in case of extensive forms.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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