

## Parietal Endometriosis a Caesarian Section Complication

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### Abstract

Parietal endometriosis is a rare condition. It represents 1 to 4% of all extra-genital locations of endometriosis. It generally grafts on surgical scars but its onset is generally delayed long after the causing surgery predisposing to its misdiagnosis. Parietal endometriosis is the result of endometrial cell graft in situ during the surgical opening of the muscular and aponevrotic spaces. The pain that is paced on menstruations' rhythm is the main clinical symptom and an important diagnostic feature. Therefore, the diagnosis is based on the pathological analysis. Medical treatments lack for efficiency and drugs protocols are not unanimous. Surgical removal is the gold standard for the cure of this condition. We report the observation of 34 years old women with a story of two anterior caesarian sections. The last surgery took place 18 months before the consultations in our department. The patient suffered from a painful parietal lump evolving from 7 months. The diagnosis of parietal endometriosis was suspected clinically and confirmed pathologically after surgical removal of the lump. Based on this case report and a literature review, we discuss the particular diagnostic and the therapeutic features of this location of endometriosis.

**Keywords:** Endometriosis; Cesarean; Pelvic pain; Parietal mass

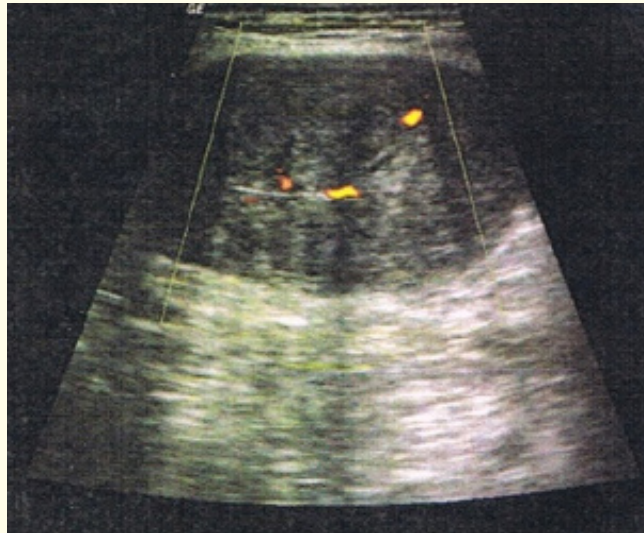
### Introduction

Endometriosis is a particularly common condition affecting 8 to 15% of women of childbearing age. Its extra-genital locations, widely described through literature, can affect almost every body organ except the spleen. The most affected organs are the lungs, the gallbladder, the colon, the small intestine and the recto-vaginal wall [1]. The parietal endometriosis is a rare condition. It concerns only 1 to 4% of all cases of extra-genital endometriosis [2]. The rectus abdomen muscles are most commonly affected. Very rarely primitive, parietal endometriosis usually occurs on a gynecological or obstetrical surgery scar, including episiotomies, uterine surgery scars and scars of caesarean sections, the passage of an amniocentesis needle or a laparoscopy trocar/incision. Its incidence after cesarean section is variable according to studies from 0.03 to 0.4% [3]. The development of a surgical scar endometriosis can be very delayed after the surgery and often predisposes to misdiagnosis and inadequate surgical treatment [4].

### Observation

A 34 years old patient consulted for parietal pain sitting at a caesarean scar and lasting for 07 months. It was cyclical pain without any particular rhythm concomitant with the menstruation and with no other associated symptoms. The patient was secunda gravida, secunda para.

The two deliveries took place by caesarean section for fetal-pelvic disproportion, which the last intervention dated back to the previous year and a half. They were held without incident with no complications. The patient had no particular medical or surgical history. The physical examination revealed a good quality parietal Pfannenstiel cesarean section scar associated with a 10 cm left para-median lump, well limited fixed to the abdominal wall, painless, with a healthy looking skin (the patient was examined outside her menstruation). The remaining physical examination was unremarkable. A soft tissue ultrasound found a left paramedian low-echogenic heterogeneous tissue formation, poorly vascularised with the Doppler (Figure 1). This image was evocative of a parietal endometrioma or a desmoids tumor.



**Figure 1:** Soft tissues sonography: heterogeneous and low level echoes formation with clear border is situated in subumbilical in the left. This formation is weakly vascularised in Doppler.

No adnexal abnormalities were highlighted. The magnetic resonance imaging (MRI) established the presence of a skin 7 cm lump with a low T1 signal and a high T2 signal with a very early and prolonged contrast injection (Figure 2). This lesion was well limited, discreetly distorting the anterior abdominal wall and into close contact with the anterior face of the left rectus abdominal muscle. The patient went through a surgical excision of the swelling, performed under general anesthesia. The enucleation of the lump was in sano carrying a portion of the underlying fascia and a portion of the left rectus muscle. Due to the significant loss of parietal substance, the closing sutures necessitated the placement of a prolene layer.

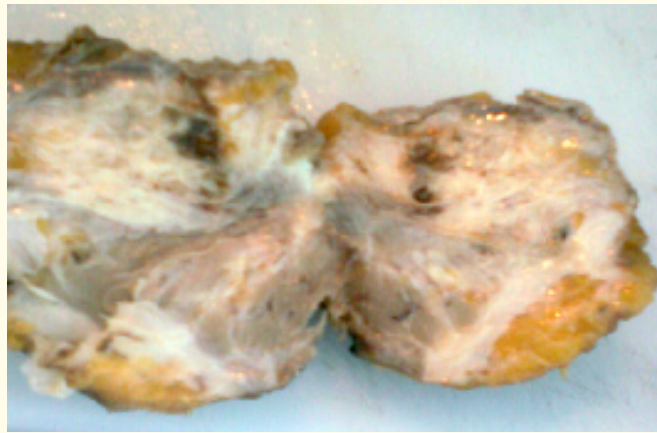
The pathological examination confirmed the diagnosis of a parietal endometriosis. Macroscopically, it showed a very well limited mass with a firm consistency (Figure 3a). When cut, it was an irregular yellowish-white heterogeneous mass infiltrating the surrounding adipose tissue. Within this mass, there were hemorrhagic and pseudo-cystic rearrangements (Figure 3b). Histological analysis showed tubular glands bathed in a regular cytogenic struma with some dense and some loose set. This proliferation dissociated the parietal wall around it (Figure 4). The postoperative course was uneventful after a 26-months follow up.



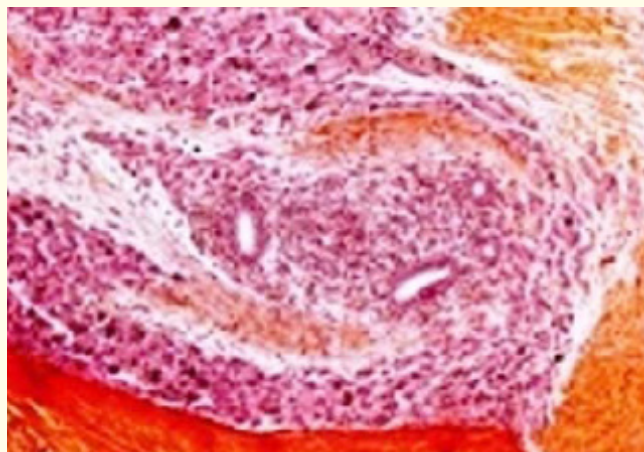
**Figure 2:** Slice MRI in T1 relaxation times: intense, early and sustained higher signal of left paramedian parietal lesion (□).



**Figure 3a:** Well enough demarcated mass with bosselated outlines.



**Figure 3b:** In the section; the mass is pseudotumoral, heterogeneous. Its contains some irregular whitish zona and some pseudocystic, hemorrhagic focus.



**Figure 4:** Histology: presence of some tubular gland. They contain regular endometrial cells and they are surrounded by cytotrophoblastic chorion with variable density.

### Discussion

The external endometriosis is usually genitally located. Its extra-genital locations are unusual and rare. The abdominal wall location is even rarer, representing 0.03 to 2% of all the extra-genital parietal endometriosis. It complicates about 0.1% of all gynecological and obstetrical surgical interventions' scars [5,6], and especially about 0.03% to 0.8% of all caesarean sections' scars.

The mean interval between the causal surgery and the appearance of the symptomatic endometriotic lesion is 3.8 years, but it can exceed 30 years and therefore affect postmenopausal women [4]. The abdominal parietal endometriosis has been described in different locations [6] including: cesarean scars, skin and surrounding tissues of abdominal or pelvic surgeries' scars, the site of passage of an amniocentesis needle, or scars of laparoscopy [5].

The physiopathology of endometriosis is still poorly understood. It is probably multi-factorial. Three etio-pathologic hypotheses have been proposed to explain the "spontaneous" locations. First one is the retrograde menstruation of endometrial cells by tubal reflux. The second hypothesis is the metaplasia of coelomic epithelium into endometrial tissue under the influence of hormonal factors. Finally, the metastatic theory explains some extra genital locations by lymphatic and venous embolization. For post-surgical scars locations, the assuming hypothesis of a cell graft in situ during the surgical opening of the musculo-fascial spaces seems likely. The high potential of development of the endometrial cells in low-epithelialized tissues has been proven, especially on an experimental endometriosis model obtained by the invagination of the endometrium in a caesarean scar.

The diagnosis of this location is often difficult without the contribution of pathology [6,7]. Typically, the lesion is described as a mass appearing next to a scar that expands and becomes painful cyclically, in conjunction with the menstruation. The cyclical nature of the pain is an important orientation criterion but not essential to suggest the diagnosis. When the lesion is very shallow, it is possible to observe a cyclically change in the color of the lesion (becoming bluish) and it may even be associated with a fistula with a bloody flow. The palpation of the lesion should allow assessing its size and its location depth. The lesions frequently invade the abdominal muscles and their insulation.

The main differential diagnoses of a lump associated with an abdominal scar are: hernias, granulomas on stitches, abscesses, hematomas, epidermoid cysts and rarely malignant tumors (sarcomas, metastatic carcinoma) [3]. The diagnosis can be easy in case of complete and typical symptoms. But it is often unclear. Indeed, in 37% of cases the diagnosis of abdominal parietal endometriosis is a pathological discovery [3-7]. In our patient, the clinical picture was reduced to a poorly evocative sensitive parietal mass with no real rhythm of the pain.

The ultrasound is an important diagnosis and preoperative tool. Even in the absence of pathognomonic images, it allows a presumption diagnosis in accordance with the clinical features. It also permits to specify the typically intra muscular origin of the parietal mass, its size, its contours, its extension and its relationship to adjacent structures. The sonographic aspect of parietal endometriosis is variable. It is usually a well-circumscribed solid mass, low-echoic, vascularized with a pedicle entering the periphery of the lesion with an abundant intra-lesional vascularisation. The lesions under 15 mm show no hyper vascularisation [8]. In our case, the parietal ultrasound was of a poor contribution; it only showed a well-demarcated, heterogeneous and poorly vascularized mass. Other aspects can be observed: cystic or poly cystic masses, mixed mass (solid and cystic), irregular contours, high-echoic contours. These aspects depend on several elements, including the menstrual cycle phase, the distribution of glandular and stromal elements and the importance of the distribution of the inflammatory reaction. Ultrasound is also useful for the differential diagnosis with abscess, hematoma, suture granuloma, hernia, sebaceous cyst, lipoma, malignant tumor. The three-dimensional ultrasound is a good complement to the two-dimensional ultrasound. In fact, Picard *et al.* [9] reported that it allows a better characterization of the lump and a more precise study of its limits especially the deep ones in addition to its degree of infiltration of the various layers of the abdominal wall. The use of computed tomography (CT) has been described in the literature. It may be interesting to characterize the deep invasions of the lesion. The parietal endometriosis is seen as a solid or cystic well circumscribed mass with contrast enhancement in the solid portion of the mass, but there are no pathognomonic aspects [3-5]. Currently, the MRI performs better than the CT. It confirms the diagnosis in cases of doubt by the detection of recent bleeding (high signal on T1 and T2 weighted images), or of hemosiderin residues from previous bleeding (low signal on T1 and T2 weighted images) [5,6]. The best suited MRI sequence to detect parietal endometriosis lesions is the T1-weighted fat-suppressed.



In T2 weighted images the mass may not be seen because it has the same signal than the muscle. In our patient, the diagnosis was made preoperatively thanks to the MRI showing a solid parietal mass with a low signal on T1 and T2 signal hyper. However, in case of a typical clinical presentation and excepting a deep location of the lesion, additional tests provide little information and little guidance.

The discovery of a specific biological marker of endometriosis could be an easy diagnostic tool of endometriosis even in microscopic forms and prescribing invasive examinations only for high-risk women. It could also monitor the course of treatment. Thus, the CA-125 and C-reactive protein (CRP) rise in patients with advanced stage 3 and 4 endometriosis, especially at the beginning of the menstrual cycle. However, these two markers are not specific to the disease. Indeed, CA-125 levels may rise in other pelvic pathologies.

In some cases, a fine needle aspiration biopsy guided by ultrasound, or better yet, a micro-biopsy may help confirm the diagnosis preoperatively. However, their use is controversial because of the risk of causing new implants in the puncture sites or a perforation of a hollow organ, in the case of a strangulated hernia which may simulate an endometrium [6]. Such exploration was not performed in our patient.

The diagnosis of parietal endometriosis is pathological. The macroscopic appearance of the lesion is variable depending on the period of the menstrual cycle. But it is typically a cystic tumor, with an average size of 3 cm. Once cut, the lesion has a fibrous aspect with central necrotic areas recalling old blood. Under the microscope, the parietal endometriosis has the same structure as the eutopic endometrium. It consists of a cylindrical glandular tissue and a dense stroma. The distribution of these two elements is not smooth and varies with changes in the hormonal impregnation. Indeed, during the proliferative phase, the mitotic activity of the epithelial cells is important and the stromal cells are uniform. During the secretory phase, the stroma contains two types of cells: large cells and small clear cells that correspond to ante-decidual cells and endometrial granulocytes respectively [3-5]. The pathologist must be vigilant. Indeed, the typical aspect of the parietal endometriosis may be confused with adenocarcinoma, adenocarcinoma metastasis or peritoneal pseudo-myxoma. The immune-histo-chemical assays of steroid receptors may be an aid to diagnosis [5]. In our patient, the histological features have led to the diagnosis with certainty making the use of additional immune-histo-chemical techniques unnecessary.

The place for medical treatment (progesterone, anti-gonadotropin, LHRH agonist) in case of parietal endometriosis is not unanimous. Although it can improve the symptoms (reduce the pain and the inflammation), it do not allow the healing of the lesions that recur rapidly and systematically when the drugs are stopped. Indeed, the sclerotic reaction defining the lesion of endometriosis, its poor vascularisation and the importance of the tumor mass compared to the small amount of hormone receptor explain the lack of beneficial effect of a preoperative medical treatment of parietal endometriosis. Moreover, these drugs may expose the patients to the side effects of hormone suppression and/or androgenic effects. However, it seems that the medical treatment can be an induction therapy for large masses in order to reduce the volume of the lesion before surgeries that may be considered as decaying at first. No medical treatment was attempted in our patient.

The surgical excision is the gold standard treatment recommended for parietal endometriosis. It is the only treatment that has proven its effectiveness. It can confirm the diagnosis by allowing pathological examination and it is curative [1,3-5,8]. Indeed, some cases of cancer transformation of parietal endometriosis have been described (0.7 to 1% of the cases) [10]. On the technical side, the surgical excision should be wide, remove the entire lesion, the muscle and the adjacent fascia with a margin of excision of at least 5 mm in healthy zone. It is wise to avoid breaking of the operative specimen. Some cases of postoperative recurrence in cases of incomplete resection have been reported in 12.5% by Patterson, 16.6% in Wasfi's series and 28.6% in Seydel work. The surgical procedure may be decaying, and may require a parietal prosthesis to close the defect in the fascia. This was the case in our patient.

### Conclusion

The parietal endometriosis is a rare and often misunderstood condition. Incisional endometriosis should be considered in any mass sitting on the scar of an abdominal intervention with or without cyclic pain whose intensity varies with the rhythm of the menstrual cycle in a woman of childbearing age with a history supporting gynecological or obstetrical surgery.

Additional exams are not very specific. The MRI may be beneficial to precise the lesion extension or eliminate a differential diagnosis. The diagnosis is always pathological. The treatment is surgical with a large enough excision taking the connective and muscular tissues affected to prevent recidivism.

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