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Parietal-Scar Endometriosis after Cesarean Section: about Nine Cases and Review of the Literature

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Abstract: ***Endometriosis of the abdominal wall, defined as the ectopic implantation of endometrial tissue outside the uterine cavity, is a rare and often overlooked condition. It usually occurs on a gynecological or obstetrical surgical scar. The typical clinical presentation is that of a parietal mass associated with pain punctuated by menstruation. The diagnosis is confirmed histologically. The treatment is mainly surgical and is based on the complete excision of the lesion.***

Keywords: endometriosis, cesarean scar, ultrasound, surgical treatment

1. Introduction

Endometriosis is a benign pathology defined by the presence of endometrial cells outside the uterine cavity, the morphological and functional characteristics of which are those of endometrial mucosa. The most frequently observed site is the external intraperitoneal genital area (at the level of the internal genital organs).

Other extra genital sites are much less common. This is particularly the case of parietal endometriosis which remains rare and often an overlooked pathology.

Indeed, scar endometriosis is a relatively rare entity that usually develops in the skin of the subcutaneous tissues, and of the muscles of the abdominal and pelvic wall at the site of a surgical scar following an obstetrical or gynecological surgery and in particular after a cesarean section [1]. Surgical scar endometriosis affects 0.03 to 0.4% of cesarean scars.

The present study describes all the cases of parietal scar endometriosis after cesarean section managed in our department and reviews the literature; we illustrate the signs and symptoms which can lead to an earlier diagnosis and to an effective treatment.

2. Materials and methods

This retrospective study covered 9 cases of parietal scar endometriosis managed in the Department of Obstetrics & Gynecology at TaharSfar University Hospital in Mahdia over a five- yearperiod extending from January 2014 to January 2019, and whose anatomopathological analysis confirmed scar -endometriosis for each lesion retained. Demographic and anamnestic characteristics, number of caesarean sections performed, patient complaints, time to onset of these complaints, location and size of the mass, diagnostic methods used, surgical treatment procedures, duration of patients' hospital stays and the results were all recorded.

3. Results

The mean age of our patients was 30 years with extremes ranging from 23 years to 35 years. The body mass indices (BMI) were ≥ 25 kg / m² (66.6%) for six patients and <25 (33.3%) for the other three patients.All patients had at least one cesarean delivery with Pfannenstiel-type laparotomies, 5 patients with a unicicatricial uterus (55.5%), 3 patients with two-scarred tissue (33.3%), and 2 patients with three-scarred tissue (22.2 %).

The interval between the intervention and the appearance of the first symptoms is on average one year and 11 months.

All the patients had a localized mass on their anterior abdominal walls, close to the incision and complained of cyclic pain from their premenstrual periods.

This mass was incorporated into the subcutaneous tissues in 7 patients (77.7%) and in the muscular layers of the abdominal wall in 2 patients (22.2%).

The mass felt moderately hard, solid, and partially mobile during palpation, and was about 2 × 3 cm in size and growing during menstruation.

This mass was detected on the right side of the scar in 6 patients (66.6%), on the left side of the scar in 2 patients (22.2%) and on the midlinescar in one patient (11.1%).

All patients had an abdominal ultrasound for diagnostic purposes.

The lesions were completely surgically excised along with a safe, normal-tissue margin surrounding them. The diagnosis of parietal-scar endometriosis was made by a histopathological examination in all the patients. Measurements during the pathology examination showed that the average diameter of the mass was 2.5 cm.

The average length of hospital stay was 2 days,and no postoperative complications were observed. All patients were followed up later and no recurrence was observed .

4. Discussion

Endometriosis is the ectopic implantation of endometrial tissue. Endometriosis of the abdominal wall is an uncommon pathology whose initial diagnosis is not always easy [2]. unlike other atypical implantation sites such as the gastrointestinal tract or the urinary tract, It is associated with pelvic endometriosis only in 14.3% to 26% of cases [3].It represents 0.03 to 2% of extragenital endometriosis.

Scar Endometriosis refers to endometriosis occurring postsurgically at the incision site. It is called an endometrioma when a mass lesion is formed at the site. The first documented case of scar endometriosis dates back to 1903. Gynecological surgeries, notably hysterectomy (2%) and cesarean section (<0.4%), are the most predisposing factors. Tubal ligation, laparotomy for ectopic pregnancy, salpingectomy and episiotomy are less common causes.

The pathophysiological mechanism is poorly understood. It is probably multifactorial. For parietal endometriomas, the most likely mechanism is the local grafting of endometrial cells which will develop in a particular context. A history of surgery is thus observed in these patients. Rare cases of parietal endometriosis have been reported in patients with no history of surgery. Rather, vascular and lymphatic dissemination are suspected [4, 5, 6]. With the exception of the parietal localization, the etiopathogenesis of the other localizations has not yet been established with certainty, although the theory of hematogenous and lymphatic dissemination is the most accepted [4].

Clinically, Women with symptomatic scar endometriosis most often present witha nodular, inflammatory, persistent infiltration of an abdominal scar. This lesion is painful and catamenial [4]. This infiltrating, nodular, painful and cyclical nature of the lesion was found in all our patients. Frequently, the inflammatory zone is associated with serous or sero-bloody discharge which becomes exacerbated at the time of menstruation [4, 7]. This notion was found in our patients. Palpation of the lesion should allow the assessment of its size and location; the lesion frequently invades the abdominal muscles and their sheath. The time of onset remains very variable (2 months to 15 years after the surgical procedure). In the case of a typical picture, the diagnosis can be easy to evoke. But, it is sometimes more difficult. In 37% of cases, the diagnosis is a pathological discovery [8, 9].

Non-invasive imaging methods such as Color Doppler Ultrasound, CT and MRI can be very suggestive of the diagnosis. Indeed; The first examination to be requested is ultrasound, an easy-to-access, non-invasive examination, which plays an important role in the diagnostic orientation and preoperative assessment, even if it does not allow any formal diagnosis. It confirms the typically intramuscular parietal origin of the mass suspected on clinical examination. It is most often a well- limited, tissular, and hypoechoicmass but the lesion canbe cystic, solid or mixed [10] , ranging in size from 5 to 200 mm. Color Doppler often shows a very hypervascularized mass with dilated afferent vessels [10]. The CT aspect of subcutaneous localizations of endometriosis is by no means characteristic. The CT scan may show a thickening or a cystic or mixed localized solid mass of the abdominal muscle wall [11]. Magnetic resonance imaging could be more specific by allowing the detection of recent bleeding, or hemosiderin residues resulting from previous bleeding. MRI was not performed in any of our patients. However, most authors report the absence of characteristic signs in imaging because the aspects observed depend on several parameters: distribution between stromal tissue and glandular elements, hemorrhagic nature of the lesion and extent of the peripheral inflammatory reaction. Aspirating biopsy using a fine needle can help diagnose or confirm the diagnosis before considering surgical treatment [12]. Although it may be suspected clinically, parietal endometriosis can only be diagnosed by anatomopathological examination of the lesion .Indeed, this is typical and highlights endometrial glands of variable sizes often of cystic type associated with a cytogenicchorion and lymphocytic inflammation. The ectopic situation of these endometrial glands therefore corresponds to the diagnosis of external endometriosis [4, 13].

The main differential diagnoses vary according to the location of the lesion and the most common are desmoid tumor, fibrosis, suture granuloma, nodular fasciitis, adnexal tumors, etc.

The treatment of choice remains a careful surgical excision of the lesion, which is both diagnostic and therapeutic. Surgery is all the more advised since carcinomas of parietal endometriosis have been described [2, 14]. This excision must be wide to remove the entire lesion, which can recur in the event of incomplete excision. The surgical procedure can be dilapidated and the parietal reconstruction must often use devices such as the use of non-absorbable mesh in order to strengthen the aponeurotic scars. Recurrences are not uncommon, up to 10 to 15%.

Frequently used medical treatments such as progestins, oral contraceptives, and LH-RH agonists are noteffective. Although hey improve the symptoms, they do not make lesions and recurrence is very likely after cessation of therapy [15].

5. Conclusion

Local grafting of endometrial cells during surgery is the most likely pathophysiological mechanism to explain parietal endometriosis. The typical clinical picture associates swelling and pain exacerbated by the menstrual cycle, but it is not always complete. Medical imaging is not very helpful. Surgical treatment should be broad enough to avoid recurrence. No means of prevention has proven its effectiveness. Given that pelvic localizations associated with parietal endometriosis are asymptomaticin approximately 26.6% of the cases, the performance of an exploratory laparoscopy is not immediately indicated.

6. Conflicts of interest

The authors declare no conflict of interest.

7. Author Contributions

All the authors contributed to the conduct of this work. All authors also declare that they have read and approved the final version of the manuscript.

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