CASE REPORTS

Parietal abdominal endometriosis following Cesarean section

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Abstract

Endometriosis is a pathological feature induced by the presence and ectopic development of islets of endometrial active cells. The most common site of occurrence is the genital system, causing specific gynecological pathology. The extragenital localization of endometriosis is rare, but it is more severe and it may have a malignant local evolution, although its structures remain benign. The endometrial inclusions in the abdominal wall scar are iatrogenic “implants”, created at the same time with the surgical operation, performed on patients with genital endometriosis. The only curable treatment of this topography of endometriosis is the surgical removal of all the pathological tissue, through a large excision. The hormonal therapy is adjuvant. Our study presents three cases treated in our clinic; the most important objective was to establish the etiological diagnosis and, subsequently, the large excision of the lesions.

Keywords: endometriosis, abdominal wall scar endometriosis.

Introduction

Endometriosis is defined as a local dystrophic lesion induced by the presence and evolution of active ectopic endometrial inclusions.

There are two types of endometriosis: internal endometriosis (adenomyosis and myometrial adenomyomatosis) and external endometriosis: genital (located on the genitals or pelvic ligaments) and extragenital (intestine, lung, pleura, kidneys, surgical scars localizations, etc.) [1–4].

The least frequent topography is the parietal scar after surgeries in the genital area. The development of the endometriosis on a surgical scar may have a very late onset after the surgery, which often predisposes to incorrect diagnosis and inadequate surgery [1].

Surgical treatment of the parietal endometriosis requires a large extent of the excision, sometimes including the muscular and aponeurotic structures; this “sacrifice” is necessary for the removal of all the microscopic endometriotic sites, in order to prevent the recurrences [5, 6].

Our observations pertain to three patients operated for tumoral growths developed deep into the scar of the Cesarean section, at 10, 4 and 7 years distance. The presumed preoperative diagnosis was confirmed macro and microscopically, and the intervention consisted of wide excision of the tumoral growth.

Patients, Methods and Results

Case No. 1

Thirty-seven years old female patient is admitted in the Clinic in 1994 with the diagnosis of recurrent post-operative incisional hernia with multiple fistulised granulomas.

The shape of the abdominal surgical scar is an inverted “T”, consequently of a Pfannenstiel laparotomy for Cesarean section (10 years ago), followed by repeated operations for parietal scar complications, in the last two years.

Initially repeated interventions, consisting of limited excisions for suspected granulomas that did not contain any suture threads, were performed; these operations did not manage to stop the local process, leading to an important parietal defect. The surgical approach of the consecutive postoperative incisional hernia failed, being followed by recurrence and the appearance on the scar of the multiple fistulous openings, with intermittent bloody discharge.

From the patient’s history, we noted that the patient needed medical treatment for irregular, painful menstrual cycles, and infertility.

On palpation, a 4–5 cm parietal defect is identified, with a reducible hernia sack containing intestinal loops, with the edges of this defect having a firm consistency, shield-like, all around. Pressure applied to the fistulous openings allows a minimum amount of brownish liquid to drain. As an important detail, we noticed the increase in discharge during the menstrual cycle, a phenomenon accompanied by local pain.

The surgery performed discovered a tough fibrous tissue circumscribing the parietal defect with a width of up to 3 cm, invading the rectus abdomini muscles, which is covered on the surface and internally by a few millimeters diameter cavities, containing a chocolate-
colored liquid. All the affected tissue was excised, framed by healthy, normal tissue, leading to an important muscular and aponeurotic parietal defect; the restoration of the abdominal wall was achieved using a mesh. Pathology revealed fibrocollagen tissue with numerous foci of endometriosis. Postoperative evolution was favorable, with follow-up for two years showing no sign of recurrence.

Case No. 2

M.M., 26-year-old female patient, was admitted in our clinic in 1997 for a tumoral mass appeared on the postoperative scar several months after a Pfannenstiel laparotomy for a Cesarean section (performed four years ago). The main complaint was that this area became painful during the menstrual cycle. The history of the menstrual cycle and sexual activity in this patient is normal. On local examination was noticed a slight deformation, determined by the presence of a 3/2 swelling, immobile, slightly sensitive to the touch, adherent to the skin, with firmed consistency. On ultrasound examination, an anisoechogenic nodule with small hypoechoic areas enclosed in an area with hyperechogenicity, with a diffuse contour was discovered.

Based on the clinical diagnosis of parietal endometriosis, a surgical intervention is performed, identifying a dense, fibrous, structure that is removed entirely, with healthy surrounding tissue, followed by reconstruction of the abdominal wall in anatomical layers. Microscopic examination found it a dense tissue with foci of endometriosis, containing fibrocollagen inclusions. No recurrence was found after a two years of follow-up.

Case No. 3

P.M., female-patient, aged 44 years, is hospitalized on the 14th of February, 2006, for persistent diffuse hypogastric pain, and blood-like, cloudy, intermittent discharges in small quantities, from the surgical scar.

On palpation, in the umbilical scar an oval swelling is observed, around 6/8 cm, with poorly defined borders, firm consistency, immobile, adherent to surrounding tissues (Figure 1a).

From patient’s history, we noted that abdominal pain occurred about a year ago, as lower abdominal discomfort, exacerbated during the menstrual cycle. Subsequently, the hypogastric pain is accompanied by an intermittent brownish-bloody discharge through fistulous openings, developed in the postoperative scar. The scar in the abdominal wall was due to a Cesarean operation performed seven years ago; also, the pregnancy occurred after a long and sustained treatment for infertility.

The initial diagnosis was presumed as being an infected and fistulising thread granuloma, due to the pathological leakage located in the area of the scar, with swelling present in subjacent tissues; this suspected "granuloma" had been operated for three times in a period of six months, using each time limited incision and excision.

The recrudescence of the symptoms and the recurrence and increase in size of the swelling, the appearance of the brownish leak at the menstrual cycle, prolonged treatment for infertility and the presence of the scar after Cesarean section, were the arguments that led us to believe that this is a case of endometriosis with mural localization, that required a more aggressive surgical approach. The ultrasound reveals a heteroecogenous, voluminous mass, developed in the suprapubic region, in the thickness of the abdominal wall.

During surgery, a fibrous mass was identified, that was adherent to the skin, with a firm texture, centered on the muscular and aponeurotic scars but also including the internal borders of the rectus abdominis muscles, to the level of the peritoneum; the lesion starts immediately above the pubic bone to a height of about 8 cm and 5–6 cm thickness.

On the surface, we observed blue-brown areas like geodes, from which flows a brown viscous liquid (Figure 1b).

This area of pathological tissue was largely excised, with important muscular and aponeurotic excisions, requiring insertion of a mesh for the restoration of the abdominal wall (Figure 1, c and d).

Figure 1 – (a) Postoperative subumbilical scar: skin adherence to the tumoral site; (b) and (c) Tumor excision; (d) Abdominal wall aspect after tumoral excision with important muscular and aponeurotic sacrifice.
The postoperative evolution was favorable, at the discharge from the hospital the wound being healed without local problems.

The excised tissue contained a tough fibrous mass, which contained numerous cavities filled with brown liquid, few mm up to 2 cm in size, embedded in the fibrous tissue (Figures 2 and 3).

The pathology exam identified a microscopic structure of dense fibrocolagen tissue that includes numerous islets of endometriosis, with glands dilated cystically and microcalcifications; fibrocolagen tissue with giant cell granulomatous inflammation from hemosiderin and cystically dilated glands (Figures 4 and 5).

The results of the therapy remain to be evaluated at follow-ups.

Figure 2 – The tumor excised along with the affected skin; cystic cavity included in the parietal pathologic mass.

Figure 3 – The excised tumoral mass on section: multiple cystic masses and dense fibrous tissue.

Figure 4 – (a) Nodular, blue-pearl masses, with cystic structure surrounded by fibrosis; (b) Isolated glandular structures, surrounded by endometrioid stroma with rare sites of smooth muscular metaplasia; (c) and (d) Endometrial stroma containing endocervical glands (mucinous metaplasia).
Discussion

Endometriosis has been known for more than 300 years (Rokitansky, 1860), at the beginning as a purely gynecological disorder, caused by functionally active ectopic endometrial areas located in the genital tract or adjacent pelvic structures. Nowadays endometriosis is considered as a “career woman’s” disease, a disease of industrialization, etc., statistically occurring at a rate of 10%, and affecting mostly young women [7, 8].

The most important symptoms of the disease are intense pain and/or important bleeding during the menstrual cycle, menstrual cycle disorders, dyspareunia and infertility [7, 8].

As for the cause of these abnormalities, several theories were issued: the coelomic metaplasia theory (it takes into account the development of embryonic structures), the theory of induction (it supports the possibility of differentiation of peritoneal mesenchymal cells under the influence of hormonal factors), and the most plausible theory, the theory of transplantation or theory of the implant [7, 8].

Transplant or implant theory is based on the usual presence (in 80–90% of cases) of a retrograde menstrual reflux through the fallopian tubes; however, cases of endometriosis are more rare due to the intervention of the immune system that recognizes and removes these cells. Consequently, endometriosis appears to be a disease related to dysfunctions of immunological defense mechanisms, with genetic inheritance [9, 10].

The presence of endometrial structures, spread by blood or lymph towards absolutely unpredictable places (brain, peripheral nerves, lung, myocardial tissue, muscle, spinal cord, intestine, appendix, urinary tract, lymph nodes) can cause severe forms, with a multidisciplinary impact [2, 11, 12].

The “metastasized” endometriomas develop their own autonomy that is hard to be controlled, presenting with angiogenesis and the ability to respond to the endometrial hormonal stimuli.

Although benign in structure, endometriosis has all the features of malignancy: local spread, invasiveness and an outstanding ability to disseminate.

Endometriosis in a parietal scar is secondary to an intervention in the genital area, and is seen as an iatrogenic injury caused by accidental transplantation of endometrial cells or structures in the surgical wound [11, 12].

The risk of parietal endometriosis in scars was found to be 2.7‰ after obstetric interventions, 1.5‰ after gynecologic surgery, and 0.5‰ for laparoscopic procedures [13].

Some authors recommend careful isolation of the wall incision and thorough lavage with saline before the closure of the wall, to eliminate the risk of “endometriosis contamination” during interventions on the genital area [14].

The long “incubation” which can take up to 10 years, remains difficult to explain [1]. The long time of development and the slow local initial evolution, lead to false diagnoses and repeated recurrences after surgery.

Alongside with the thread granuloma and the eventration, there are cited confusions with umbilical hernia or inguinal hernia after laparoscopic gynecological interventions [10, 15].

A perineal localization on the scar after episiotomy is cited, but endometriomas are often localized on the scar following Cesarean section, in about 0.03–0.4% of cases [16, 17].

As for the clinical record, in 66% of cases classical genital endometriosis symptoms were identified, 26.6% were associated with a known pelvic endometriosis, but asymptomatic genital endometriosis are also described [17].

The cases of endometriosis in the wall scars that we treated were diagnosed at 10, 4 and 7 years period of follow-up after the initial surgery. The suspected diagnosis of endometriosis of the wall scar was supported by the patient’s history, which identified genital dysfunctions (except for case no. 2), a history of genital surgery (Cesarean section) and, in particular, augmentation of local symptoms in the menstrual cycle, possibly accompanied by an intermittent brown discharge.

Ultrasound was the most accessible and reliable imaging test for us, visualizing the parietal heterogeneous mass in the scar of the abdominal wall.

The intraoperative specific appearance of parietal
scars endometriomas are characterized by the abundant, firm fibrosis that invades the adjacent muscular and aponeurotical layers, without a clear limit, with the presence of sites containing brown liquid.

This aspect suggests the image of an “aggregation of uteruses” in miniature, their product, menstrual blood, represents the source of irritation that triggers the strong local inflammatory reactions, marked by fibrosis, with a cyclical and extensive evolution.

The lack of correct initial diagnostic, leads to recurrence due to inadequate excision. Moreover, insufficient excision of the lesion leads to the renewal of the lesion, making it more extensive and destructive.

Surgical treatment is mandatory, having curative value [10].

The hesitation relating to the excision of muscular and aponeurotical structure, that lead to significant parietal defects is not justified in the presence of this diagnosis, especially in case of recurrence. The use of substitution materials, like synthetic meshes are a solution at hand, while Chinese authors (Lai CS and Song KX) prefer different methods of autologous abdominoplasty [15].

The hormonal treatment is a controversial issue in endometriosis scar treatment and healing. Danazol and, more recently, GNRH analogues (Zoladex, Dipherelin) are used, but the results have not met the expectations, because of the significant and disproportionate side effects and, with regard to the almost certain recurrence of the condition [9, 16, 17].

Instead, used as an adjuvant hormonal therapy after surgical excision, recurrence decreased from 42.9% to 11% [12, 13].

The fact that the adjuvant hormonal treatment was not used in the first two cases, that are now well at 12 and 9 years after surgery, we incline to believe that an excision that has the borders wide enough, almost exaggerated, has exempted the patients from the side effects of hormonal treatment, that induces an early menopause, with all its accompanying negative consequences: osteoporosis, acne, increased pilosity, breast reduction, voice changes, depression, etc.

We feel that an adjuvant hormonal therapy can be addressed to those small foci that are undetectable, which could remain in place or could recontaminate neighboring tissues by the use of the surgical maneuvers.

The patient from case no. 3, which recently underwent surgery, is at an age at which physiological menopause ensues, the use of adjuvant hormonal therapy remaining to be discussed.

Conclusions

Parietal scar endometriosis is a form of extragenital endometriosis that occur secondary to a classical or laparoscopic surgery, located in the genital area, in patients that have or not known genital endometriosis.

The parietal scar endometriosis appears as an iatrogenic injury, caused by “contamination” of the abdominal wall intraoperatively, during a gynecological or obstetric intervention.

The site of the parietal scar endometriosis may become active after a period of long “incubation”, which predisposes to diagnostic confusion.

The symptoms of genital endometriosis are important in the diagnostic, a history of genital surgery and increased local parietal manifestations during the menstrual cycle being of highly suspicion.

The intraoperative findings are typical: excessive fibrosis with firm, hard consistency that involves the muscle masses, and the presence of cavities containing a brownish, chocolate-like liquid.

The only curative treatment is surgery, consisting in large excisions; in order to prevent recurrences, large muscular areas may have to be excised, resulting in parietal defects that are solved by plastic surgery procedures.

The hormonal therapy is adjuvant, usually recommended for preventing or significantly decreasing the incidence of the recurrence rate.

References

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