

ENDOMETRIOSIS OF THE ABDOMINAL WALL AFTER CESAREAN SECTION

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ABSTRACT. The incidence of scar endometrioma increased in our country related to the increased number of cesarean section performed. The aim of our study is to present our experience in treating abdominal wall, especially that we had many cases which needed abdominal wall reconstruction with a mesh implant. We reviewed the papers of 11 patients operated for scar endometriosis between 2013 and 2015. All patients had cesarean section. In four cases reconstruction of the abdominal wall was achieved with mesh. Two patients had decreased sensitivity after surgery below the scar which solved after 6 months. Seroma was most common complication 54.4%. Patients who underwent cesarean section might develop scar endometriosis, which might lead to unnecessary complex surgical procedures with abdominal wall reconstruction and temporary loss of local sensibility.

KEY WORDS: endometriosis, scar endometriosis, surgical excision

INTRODUCTION

Ectopic endometrial tissue, called endometriosis, is more commonly found within the female pelvic cavity, affecting the ovaries, the rectovaginal pouch and the peritoneum of the genital floor. But it can occur in other sites outside the pelvic cavity in abdominal surgery scar following hysterectomy and cesarean section, also in the perineum scar following vaginal deliveries with episiotomy (Jubanyik et al., 1997). Exceptional sites of implantation of the endometriosis tissue were described: central nervous system, lungs, pleurae, liver, umbilicus, pericardium, urinary tract and intestines (Cárdenas-Lailson et al., 2002).

The term scar endometrioma is used for tumor lesions. It is formed by whitish fibrous tissue, with thick chocolate-like colored liquid areas, and is located anywhere in the surgical scar (Meirelles et al., 2005). Endometriosis might occur in surgical scars following laparotomy, laparoscopy and diagnostic obstetric procedures such as amniocentesis puncture (Kaunitz et al., 1979). The majority of the cases described in the literature have occurred following obstetric procedures that exposed the endometrial tissue, especially in cases of cesarean section (Meirelles et al., 2005, Nominato et al., 2007, Leite et al., 2009).

The incidence of the scar endometrioma in the worldwide literature ranges from 0.03 to 3.5% (Nominato et al., 2007, Leite et al., 2009, Higginbottom 1973). Its frequency in episiotomy scars is much smaller than in abdominal wall scars. The theory of iatrogenic implantation is the most accepted. Usually there is no need for laborious investigations, and the diagnosis may be made solely based on anamnesis and physical examination, aided by ultra-

sound in some particular cases. However, the diagnosis must always be defined through anatomopathological examination. The treatment is basically surgical, some advocated different drugs therapies, but resolution is best achieved with surgery.

The aim of our study is to present our experience in treating abdominal wall, especially that in our series the number of cases, which needed abdominal wall reconstruction with a mesh implant, was higher than in the literature, and the tumors size were larger.

METHODS

This was a descriptive, observational, retrospective cohort study performed at the County Emergency Hospital "Pius Branzu" Timisoara. It consisted of reviewing data from the medical records of patients diagnosed with surgical scar endometrioma after surgery. These operations took place between 2013 and 2015. Eleven patients met the inclusion criteria.

Inclusion criteria were endometriosis found at pathology examination on the tissue removed from post cesarean section scar.

The main information surveyed was age, obstetric antecedents, symptoms, tumor location, size and palpation, recurrent lesions, duration of the complaint, diagnosis, treatment and asymptomatic window (time interval between the obstetric procedure and the onset of symptoms). All the patients underwent surgical removal of the tumor with a safety margin, and the definitive diagnosis was confirmed by the pathological anatomical examination. The modality to reconstruct the abdominal wall defect and the depth of the penetration of the wall were recorded.

Follow-up visits were reviewed and phone calls to every patient in the study were made prior to writing this paper in order to check the recurrence of the disease.

Complications related to surgery were considered any changes in the normal healing process.

RESULTS

There were included in this study 11 cases, operated from 2013 to 2015. The mean age of the patients at the time of the diagnosis was 32.3 years, with a range from 28 to 39 years.

All the patients underwent caesarian sections in their past. The time from the procedure to the debut of the symptoms was 41 months, range 12 to 89 months. The time from the debut of the symptoms to the surgical removal of the tumors was 23 months, range 6 to 54 months.

The location of the lesions was in the Pfannenstiel incision, the only thing which differed between the cases was the side of the lesion, five were on the right, three in the center and three on the left.

All the patients describe a tumor within the Pfannenstiel scar. Permanent pain was present in five cases and it was related with the size of the tumor and with physical activity. Cyclical pain or increase in the permanent pain was present in nine patients, it occurred during menstrual period and could be controlled with pain medication. All the patients with permanent pain had exacerbation during their period. Two patients had only nodules at the site of the incision, thought initially to be inflammatory granuloma of the scar.

The mean size of the tumor at surgery was 4/3.6 cm. In ten cases the tumors were immobile at palpation and were adherent to the abdominal wall, in one case the tumor was mobile, but this was a case with recurrence of the disease after previous excision.

MRI was used in five cases and in one of these cases raise the suspicion of malignancy.

The tumors, despite their size, did not penetrate the abdominal wall to reach the peritoneum, four out of eleven tumors penetrated the right abdominal muscles, six were adherent to the anterior abdominal aponeurosis, only one was located in the subcutaneous tissue.

After complete removal of the tumors in four cases (36.3%) the abdominal wall needed a reconstructive procedure – polypropylene mesh was used in all four cases to repair the rectus abdominis aponeurosis in three cases, and right oblique aponeurosis in one case.

Complications of the procedure were seroma in six cases (54.4%), hematoma in one case and in two cases temporary decreased in suprapubic sensitivity. Seromas were present in the cases with larger tumors and when polypropylene mesh was used, and were treated by ultrasound guided puncture-evacuation. One case needed three weeks of treatment before resolution of the seroma. Suprapubic sensitivity was treated with neurotrophic drugs and resolved after six months.

Mean follow-up was 28 months, ranges 22 to 37.

DISCUSSION

In our series, all the cases were at the level of Pfannenstiel incision, despite the fact in the literature there described endometriosis lesion at the level of the umbilical or on the episiotomy scars. This disease is also related to surgery performed by general surgeons, such as appendectomy, groin and umbilical hernia corrections in patients with pelvic endometriosis, this how we can explain the different location on the abdominal wall (Ducarme et al., 2007; Delicata et al., 1997). We did not have any episiotomy scar endometriosis because we are a general surgery service and most likely these cases are referred to the gynecology.

The procedure performed in all our patients was cesarean section, none of the patients had an open procedure for pelvic endometriosis.

Most frequent symptom in our study was the tumor, after that there was cyclical pain in nine patients, which was much often met comparing with the permanent pain. Also, the patient with permanent pain presented increase in the pain level during the monthly menses. There authors that stated that cyclic pain is not always present, as in our study nine out of eleven, in fact they described the permanent pain to be more frequent, and the diagnosis of endometriosis cannot be excluded based on the absence of cyclic increase of the pain (Aydin 2007). Others stated that the most evident clinical manifestation is a painful subcutaneous nodule, of chronic cyclical nature matching the menstrual period, with location in a surgical scar area, and consider such manifestations to be pathognomonic (Victory et al., 2007).

The mechanism of pain at the level of scar endometriosis nodules during the menstrual period is that the ovarian hormones acted on ectopic endometrial cells (stromal and glandular cells) and causes slight bleeding at the scar location, with an inflammatory reaction and subsequent tissue repair. Thus, as each menstrual cycle goes by, the lesion increases in volume and behaves like an invasive inflammatory tissue. Such invasion might compromise the whole abdominal wall thickness including the skin, subcutaneous cellular tissue, muscles, aponeurosis and peritoneum (Leite et al., 2009).

In every young patient with a tumor at the level of a cesarean section and pain at this level endometriosis should be the first suspicion after post-incisional hernia. Other differential diagnosis might include granuloma, abscess, lipoma. If the history of the disease is carefully reviewed the diagnosis of endometriosis will prevail and more expansive imagistic exploration will be redundant.

While the radiologic examination brought a lot to the diagnostic, sometimes over diagnosed is a risk. One of the patient was misdiagnosed with a sarcoma of the abdominal wall after MRI, and the intra-operative pathology report was needed to establish the extent of the abdominal wall resection. None of the patient had fine needle aspiration biopsy.

We strongly believe that symptoms and the history of the cesarean section are enough for the diagnose, but MRI or CT scan could reveal the extent

of the penetration in the abdominal wall and provide information to the surgeon to settle a better plan before surgery, especially in large fixed tumors.

The best treatment for abdominal wall endometriosis is surgical removal of the whole tumor with safety margins to prevent recurrence. If the abdominal wall is penetrated the damage area might need reinforcement. In our study four patients had a polypropylene mesh placed to repair the defect in the aponeurosis. This led to further complications – these patients developed large seromas. Up to three weeks these seromas had to be drained under ultra-sound guidance. No infections occurred during the study. It is important that the patient address to the doctor before the tumor grow in size and the abdominal wall is not penetrated.

An association between scar endometriosis and pelvic endometriosis is found in one quarter of the cases. On the other hand, routine pelvic cavity investigation by means of laparoscopy is not recommended (Picod et al., 2006; Xiang et al., 1995).

The possible complications of the endometriosis are recurrence rates after surgery, malignant transformation and the anatomical defects in large tumors. Olejek reported almost one out of four recurrence rates in a follow-up of only nineteen months, an explanation could be the seize of the tumors in their study, Leite et al report only 6% (Leite et al., 2009; Olejek et al. 2008). Although the size of the tumors in our study was large we did not experience any recurrence after a follow-up of 28 months, one case was a recurrence at the time of the procedure after a previous surgery done for what was thought to be a foreign body granuloma.

A particular complication in our study was the reduced sensitivity and sensibility below the scar in two cases, both were very large median tumors with extension below the cesarean section scar. The removal and the dissection of the subcutaneous tissue in the area led to decreased in the sensibility of the area, which further led to a decrease in sexual satisfaction. The symptoms resolved in about six months.

Malignant transformation of a scar endometriosis nodule was described very rare, the tumor could become a papillary chistadenocarcinoma, in other cases an endometrial adenocarcinoma, or a clear cell carcinoma, either a sarcoma were also described. Razzouk described a case of transformation of an endometriosis nodule in a mixt malignant tumor – clear cell adenocarcinoma and endometrial carcinoma (Razzouk et al., 2007).

The only risk factor for the presence of endometriosis in the Pfannenstiel scar tissue was a previous history of obstetric surgical procedures a cesarean section. The results from the current study corroborate this fact, since 100% of the patients had obstetric histories involving this procedure. Opening of the uterine cavity favors the implantation of the endometrial tissue in the abdominal wall scar. In evaluating the obstetric history of 81 patients with endometrioma, Wicherek et al. stated that performing cesarean sections without the presence of labor conditions more than doubles the risk in relation to

situations in which cervical ripening and uterine contractions are present (Whicherek et al., 2007).

Others emphasized that endometriosis will occur on the Pfannenstiel scar if the surgical technique when performing cesarean section is incorrect: failure to close the parietal and visceral peritoneum, not to use the same surgical material and the same instruments as used in hysterorraphy, when suturing other abdominal wall layers, while others recommend washing the abdominal wall as a prophylactic measure, using irrigation with a salt solution before closing the wall (Minaglia et al., 2007; Gajjar et al., 2008).

CONCLUSION

Patients who underwent cesarean section have a risk of developing scar endometriosis, which if is left untreated might lead to unnecessary complex surgical procedures with abdominal wall reconstruction and temporary loss of local sensibility. The diagnosis was usually easily settled, in cases of unclear symptomatology imaging was required.

DISCLOSURE

The authors have nothing to disclose.

All authors contributed, read and approved the paper.

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