sciendo
ПРИЛОЗИ. Одд. за мед. науки, XLIV 3, 2023 МАНУ
CONTRIBUTIONS. Sec. of Med. Sci., XLIV 3, 2023 MASA

10.2478/prilozi-2023-0055 ISSN 1857-9345

ABDOMINAL WALL ENDOMETRIOSIS AT THE CESAREAN SECTION SCAR

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ABSTRACT

Abdominal wall endometriosis is atypical localization of the extra-pelvic endometriosis with non-specific symptoms and is difficult for diagnosis. Cesarean scar endometriosis (CSE) is the most common type of abdominal wall endometriosis, which usually develops after obstetric operations. We report a case of a 33-year-old woman who had two previous cesarean sections presented with a mass in the subcutaneous tissue of the abdominal wall, approximately 4 cm superior to the Pfannenstiel incision, 5 years after her second lower segment caesarean section. The classic clinical presentation, imaging findings on ultrasonography and computed tomography are analyzed. Treatment with local surgical excision of the mass is discussed. The diagnosis was confirmed with histopathological analysis of the surgical sample. When it comes to the limited painful lesion in the subcutaneous tissue at the cesarean scar, with a pain intensifying during menstruation, the physician should consider cesarean scar endometriosis in women of reproductive age with a history of cesarean section.

Keywords: Cesarean section scar, extrapelvic endometriosis, subcutaneous painful nodule, surgical scar

INTRODUCTION

Endometriosis is a sex hormone-dependent gynecological disease where the functional and morphological endometrial tissues are present outside the uterine cavity [1]. Endometriosis most commonly develops intraperitoneally and mainly affects ovaries, peritoneum, uterine ligaments and rectovaginal septum [2]. However, endometrial implants can be found outside the pelvis and can affect different organs, causing a variety of symptoms with a cyclical pattern of manifestation. The main sites targeted by extra pelvic endometriosis include the bladder, bowel, kidney, ureter, lymph nodes, pleura, lungs and also abdominal wall [3]. The most common site of extra pelvic endometriosis is the abdominal wall (4%) and is associated with prior surgical scars following gynecologic abdominal procedures like cesarean section, myomectomy, hysterotomy, hysterectomy, or tubal ligation [4]. Cesarean scar endometriosis is the most common abdominal wall endometriosis, with an estimated incidence of 0.03–0.4% [5]. Implantation of endometrial tissue into a surgical incision has been proposed as an explanation of the condition's pathophysiology. It is thought that during the cesarean delivery the endometrial tissue is inoculated into the incision. With an appropriate supply of nutrients and hormonal stimuli, these endometrial cells survive and proliferate if there are sufficient nutrients and appropriate hormonal environment [6].

CASE PRESENTATION

A 33-year-old married Roma female presented to the gynecology department at our hospital with a painful abdominal mass at the site of the cesarean scar for one year, which worsened during her menstrual cycle. The patient had undergone a lower segment cesarean section through a transversal incision five years previously due to fetal distress. It was her second pregnancy, and the baby was healthy. Her menses were established six months after delivery. The complaints started to appear four years after her second cesarean section. Her pain was intermittent and could be induced by touch, pressing, or changing body position. The pain started a day to 3 days before the menses and peaked during the menstrual period and then gradually decreased after 2 to 3 days of the menses. This condition has been continuing since then. She had to take analgesics to control the pain. On clinical examination, her general condition was good, and there was no pathological condition. She was afebrile and her vital signs were stable. On examination of the abdomen, on inspection, in the lower abdomen, a Pfannenstiel incision scar was present. An immobile mass of size around 6×5 cm was seen in the right side of the umbilical area, 5-6 cm cranial to her cesarean scar near the midline that was painful to palpation and exacerbated by movement. There was no change in the color of the skin over the lump or discharge from the site. The findings of the routine laboratory analyses and coagulation profiles were completely normal. Of the tumor markers, the cancer antigen (CA) 125 was elevated (204 U/mL, reference range 0–35 U/mL), while CA 19-9 and carcinoembryonic antigen were within the normal ranges.

The ultrasound of the anterior abdominal wall showed a heterogeneous predominantly hypoechoic subcutaneous right paramedian mass attached to the rectus abdominis muscle with internal scattered hyperechoic partition and speculated margins infiltrating the surrounding tissue measuring 5.7x5.3 cm located in the subcutaneous plane of the right upper abdominal quadrant at the site of the pain. (Fig.1). The transvaginal ultrasonography revealed an anteverted uterus measuring 7.6 cm, and her ovaries had a normal measuring.

A complimentary computed tomography (CT) scan with intravenous contrast showed a well-defined lesion dominantly in the right rectus abdominis muscle as a solid soft tissue mass, well-circumscribed, with irregular hypodense contents, with a moderate post-contrast enhancement, measuring 7.3x4.5 cm. (Fig.2).



Figure 1. *Ultrasound of the abdomen showed an irregular heterogeneous hypoechoic mass of 5.7x5.3 cm in the anterior abdominal wall*

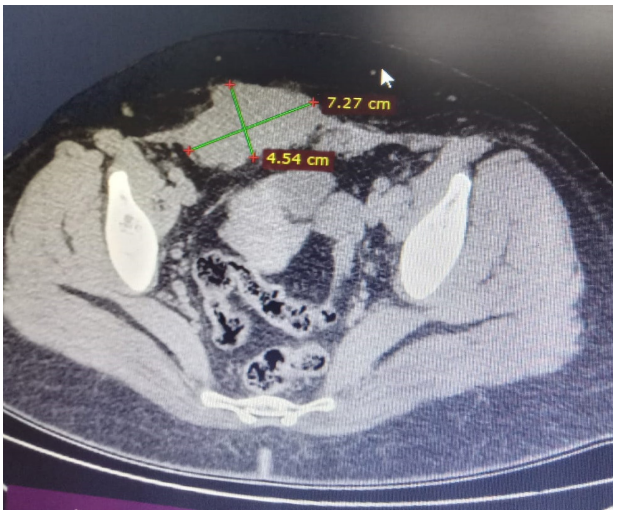


Figure 2. *CT scan of the mass particularly invaded the right rectus abdominis muscle*

Based on her obstetrical history, clinical examination and ultrasound findings, a probable diagnosis of the scar endometriosis was made, and was planned for surgical excision of the abdominal wall. Under a general anesthesia, wide surgical excision of the endometriosis mass was performed from the subcutaneous tissue extending up to the right rectus muscle and the defect was repaired with Vicryl 2, and closure of the fat plane and skin was performed. The lump was about 5x7 cm firm at the subcutaneous plane infil-

trating the rectus sheath and penetrating the right rectus abdominis muscle to a depth of about 2 cm. Chocolate-colored fluid and extensive fibrosis of abdominal tissue around the scar was noticed, which was excised entirely, including the nodular portion for histopathological examination. The gross examination of the excised tissue revealed irregular, grayish-black fibro fatty mass with areas of congestion and hemorrhage (Fig.3). The specimen was sent for histopathological examination preserving in 10% formalin solution. The histopathology report revealed endometrial glands by endometrial stroma involving fibro-adipose and muscular tissue with hemosiderin pigment at places. The histopathological image is shown in Figure 4. The patient was discharged 4 days after the surgery in a good condition.



a.

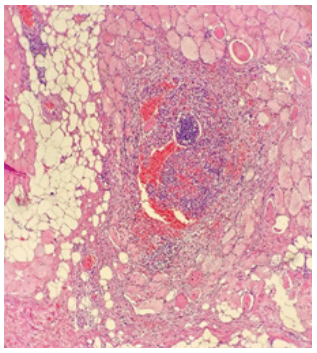


b.

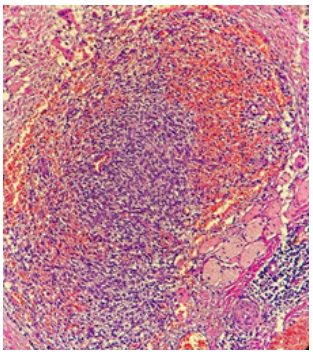


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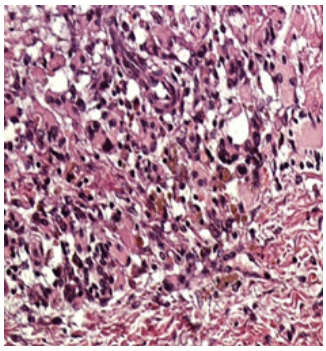
Figure 3.
a. Endometriosis mass in the subcutaneous tissue, b. Intra-operative picture after complete excision of the endometriosis mass, c. Postoperative macroscopic appearance of the excised masses



a.



b.



c.

Figure 4. *A histological appearance of the mass showing:*
a. Endometrial glands and stroma surrounded within conjunctive and adipose tissue, (He&Eo x 100),
b. Presence of endometrial stroma with fresh hemorrhages with an inflammatory reaction around and with the presence of giant cells, (He&Eox200)
c. Presence of hemosiderin laden macrophages (He&Eox400)

DISSCUSION

Scar endometriosis is described as a mass located near or inside a surgical scar, most frequently after a caesarean section, although it has been described also after hysterectomy and laparotomy [7]. Various theories have been postulated regarding the development of scar endometriosis.

The most accepted theory is the transport theory which explains that the iatrogenic implantation of hormone-sensitive endometrial tissue to the edge of a wound during abdominal or pelvic surgery followed by hormone-mediated changes in that implanted tissue causes endometriosis [8]. Our case also suggested iatrogenic implantation of endometrial tissue that was distributed through an emergency cesarean section and inoculated into the border of the matching abdominal wall. The systematic review study described Pfannenstiel incision as the most common incision found in CSE, and patients that had this type of incision presented a shorter latency period when compared with vertical midline incision. Although Pfannenstiel incisions have a better cosmetic appearance and decreased association of surgical hernias, they involve greater dissections of plans, more damage to the longitudinal abdominal capillaries, and consequently more blood loss, which can favor the implantation of endometrial cells at the edge of the operation cut that is difficult to be removed during the cesarean procedure [9]. The most common presentation of cutaneous endometriosis is a triad of non-malignant abdominal mass, recurring pain with menses, and previous history of abdominal surgery. The degree of pain and dimensions of scar endometriosis vary with the menstrual cycle [10]. Such characteristic symptomatic triad should not present a diagnostic dilemma, however, differential diagnoses may involve fibromas, lipomas, suture granulomas, incisional and ventral hernias, hematomas, abscesses, fat necrosis, lymphomas, desmoid tumors and sarcomas [11]. The mean age of patients with caesarean scar endometriosis is 35 years, and the time from surgery to endometriosis recognition varies from three months to two decades [12]. Our patient was 33 years old, and the symptoms started to appear four years after her second cesarean section. Sonography, CT, and magnetic resonance imaging (MRI) may help diagnose scar endometriosis [13]. In our case, with careful attention to the medical history and clinical examination, a diagnosis of scar endometriosis was suspected before imaging was conducted. The ultrasound and CT of the abdominal wall imaging assisted us in determining the extension of the endometriosis mass, with more accurate data about the penetration, extension, and type of content of the nodule. The treatment of choice is the complete excision of the endometriosis nodule. Some authors recommend a 5 to 10 mm margin-free excision to prevent recurrence [1, 14]. Because the process had involved many layers of the abdominal wall, we removed the lesion piece by piece, with the aim of preserving the healthy parts of the surrounding tissue.

CONCLUSION

Cesarean scar endometriosis is a very rare condition, but it should always be considered when it comes to women of reproductive age who visit a hospital with a painful mass on the abdominal wall which becomes increasingly severe during menstruation cycles, with a history of previous obstetric and gynecologic operations. Early and accurate diagnosis can be established with a careful medical history, good physical examination, and imaging methods such as ultrasound CT-scan, or MRI when it comes to differential diagnosis. Wide surgical excision is the best treatment for scar endometriosis required by obtaining a secure marginal boundary. Definitive diagnosis is verified with histopathological analysis.

REFERENCES

1. Purbadi S, Purwoto G, Winarto H, Nuryanto KH, Scovani L, Sotarduga GE. Case report: Caesarean scar endometriosis - A rare entity. Int J Surg Case Rep. 2021 Aug;85:106204. doi: 10.1016/j.ijscr.2021.106204. PMID: 34325300; PMCID: PMC8329506.
2. Bartłomiej B, Małgorzata S, Karolina F, Anna S. Caesarean Scar Endometriosis May Require Abdominoplasty. Clin Med Insights Case Rep. 2021 Jun 25;14:11795476211027666. doi: 10.1177/11795476211027666. PMID: 34248360; PMCID: PMC8236782.
3. Doroftei B, Armeanu T, Maftei R, Ilie OD, Dabuleanu AM, Condac C. Abdominal Wall Endometriosis: Two Case Reports and Literature Review. Medicina (Kaunas). 2020 Dec 21;56(12):727. doi: 10.3390/medicina56120727. PMID: 33371515; PMCID: PMC7767517.
4. Paramythiotis D, Karlafti E, Tsomidis I, Iraklis G, Malliou P, Karakatsanis A, Antonios M. Abdominal wall endometriosis: a case report. Pan Afr Med J. 2022 Mar 10;41:193. doi: 10.11604/pamj.2022.41.193.33536. PMID: 35685105; PMCID: PMC9146603.
5. Nepali R, Upadhyaya Kafle S, Pradhan T, Dhamala JN. Scar Endometriosis: A Rare Cause of Abdominal Pain. Dermatopathology (Basel).

2022 May 5;9(2):158-163. doi: 10.3390/dermatopathology9020020. PMID: 35645231; PMCID: PMC9149924.
6. Masereka R, Kiyaka SM, Sikakulya FK. Endometriosis arising in a cesarean section scar: A case report. Int J Surg Case Rep. 2022 Mar;92:106862. doi: 10.1016/j.ijscr.2022.106862.PMID: 35231741; PMCID: PMC8885982.
7. Buscemi S, Maiorana A, Fazzotta S, Incandela D, Palumbo VD, Damiano G, Maffongelli A, Messina M, Bisso C, Anzelmo G, Curione F, Cantavenera V, Bellomo E, Raia VE, Scimeca R, Geraci G, Cudia BM, Lo Monte AI. Scar endometriosis: not a rare cause for a painful scar. Clin Ter. 2021 Mar 15;172(2):129-133.
8. Poudel D, Acharya K, Dahal S, Adhikari A. A case of scar endometriosis in cesarean scar: A rare case report. Int J Surg Case Rep. 2023 Jan;102:107852. doi: 10.1016/j.ijscr.2022.107852. PMID: 36584626; PMCID: PMC9827051.
9. Ananias P, Luenam K, Melo JP, Jose AM, Yaqub S, Turkistani A, Shah A, Mohammed L. Cesarean Section: A Potential and Forgotten Risk for Abdominal Wall Endometriosis. Cureus. 2021 Aug 24;13(8):e17410. doi: 10.7759/cureus.17410. PMID: 34589321; PMCID: PMC8459811.
10. Gonzalez RH, Singh MS, Hamza SA. Cutaneous Endometriosis: A Case Report and Review of the Literature. Am J Case Rep. 2021 Sep 21;22:e932493. doi: 10.12659/AJCR.932493. PMID: 34547012; PMCID: PMC8476184
11. Ramdani A, Rais K, Rockson O, Serji B, El Harroudi T. Parietal Mass: Two Case Reports of Rare Cesarean Scar Endometriosis. Cureus. 2020 Feb 8;12(2):e6918. doi: 10.7759/cureus.6918. PMID: 32190473; PMCID: PMC7061853.
12. Carsote M, Terzea DC, Valea A, Gheorghisan-Galateanu AA. Abdominal wall endometriosis (a narrative review). Int J Med Sci. 2020 Feb 10;17(4):536-542. doi: 10.7150/ijms.38679. PMID: 32174784; PMCID: PMC7053307.
13. Chen LY, Hsu SD. Scar Endometriosis Presenting as a Painful Abdominal Mass. Gynecol Minim Invasive Ther. 2020 Apr 28;9(2):98-100. doi: 10.4103/GMIT.GMIT_74_18. PMID: 32676289; PMCID: PMC7354748.
14. Benedetto C, Cacozza D, de Sousa Costa D, Coloma Cruz A, Tessmann Zomer M, Cosma S, Trippia CH, Santos Cavalcanti TC, Alves Castro GR, Kondo W. Abdominal wall endometriosis: Report of 83 cases. Int J Gynaecol Obstet. 2022 Nov;159(2):530-536. doi: 10.1002/ijgo.14167. PMID: 35246836.

Резиме

ЕНДОМЕТРИОЗА НА АБДОМИНАЛЕН SИД НА ЛУЗНА ОД ЦАРСКИ РЕЗ

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Ендометриозата на абдоминалниот sид е атипична локализација на екстрапелвична ендометриоза со неспецифични симптоми и е тешка за дијагноза. Ендометриоза на лузната од царски рез е најчестиот тип ендометриоза на абдоминалниот sид, која обично се развива по акушерски операции. Се презентира случај на 33-годишна жена што имала два претходни царски реза со маса во поткожното ткиво на абдоминалниот sид, приближно 4 cm над инцизијата по Pfannenstiel, 5 години по нејзиниот втор царски рез во долниот сегмент на матката. Се анализираат класичната клиничка презентација, наодите од слики на ултрасонографија и компјутерска томографија. Се дискутира за третман со локална хируршка ексцизија на масата. Дијагнозата е потврдена со хистопатолошка анализа на хируршкиот примерок. Кај секоја ограничена болна лезија во поткожното ткиво на местото на резот, со интензивна болка за време на менструацијата кај жените во репродуктивна возраст со историја на царски рез, лекарот треба да размисли за ендометриоза на лузна од царски рез.

Клучни зборови: лузна од царски рез, екстрапелвична ендометриоза, поткожен болно чувствителен јазол, хируршка лузна