

Caesarean Scar Endometriosis May Require Abdominoplasty

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ABSTRACT: Endometriosis is defined as an ectopic presence of endometrium-like tissue outside uterine cavity, which most commonly involves intraperitoneal organs. However, one of the less frequent forms of the disease is abdominal wall endometriosis usually developing in surgical scars following obstetric and gynaecological surgeries involving uterine cavity entering, that is, caesarean section, myomectomy or hysterectomy. In this case report we present a case of a patient with extensive caesarean scar endometriosis, who required complex surgical management. Successful surgical treatment involved not only radical tumour resection and application of mesh in postoperative hernia prevention but also adequate wound closure ensuring satisfactory cosmetic results, which was most challenging. The abdominal wall defect could not be sutured by traditional technique, thus polypropylene mesh was used and partial abdominoplasty was performed. The wound healed without complication and 24-month follow-up showed no evidence of local recurrence and satisfactory cosmetic result. In case of extensive endometrial abdominal wall tumours surgical treatment may involve application of advanced plastic surgery techniques, like abdominoplasty or skin/musculocutaneous flaps transposition.

KEYWORDS: Scar endometriosis, abdominoplasty, surgical mesh

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Introduction

Endometriosis is a benign gynaecological condition defined as an ectopic presence of endometrial tissue outside uterine cavity. The condition affects mainly women in reproductive age, although postmenopausal endometriosis have also been reported.¹ Endometriosis most commonly develops intraperitoneally and mainly affects ovaries, peritoneum, uterine ligaments and rectovaginal septum.¹ Other less common extraperitoneal locations include lungs, kidneys, central nervous system, as well as incisional scars following obstetric and gynaecological surgeries involving uterine cavity entering, that is, caesarean section, myomectomy or hysterectomy.² Endometriosis in caesarean section postoperative scar was first described at the beginning of 20th century by Robert Mayer. The incidence of the condition is increasing constantly, due to the growing number of caesarean sections worldwide³ and is estimated at less than 0.5% of all caesarean sections procedures.^{2,4} There are many papers describing treatment approaches and outcomes of caesarean scar endometriosis but only a few of them present application of advanced plastic surgery techniques, like abdominoplasty or skin/musculocutaneous flaps transposition. We present a case of an extensive caesarean scar endometrioma necessitating partial abdominoplasty.

Case Report

A 37-year-old Caucasian woman was admitted to Department of Oncological Gynaecology and Gynaecology with a large

exophytic abdominal wall tumour (12 cm × 6 cm) in a caesarean section scar (Figure 1a). The caesarean section was performed 4 years earlier through Pfannenstiel incision. Both the surgery and postoperative period were not complicated. First pain symptoms with 2 cm tumour occurred 2 years after caesarean section. Over the next 2 years, local burning pain gradually improved and the tumour constantly enlarged in size. The patient did not undergo any hormonal treatment and reported regular menstruation periods with scanty menstrual blood flow occurring regularly every 28 days, lasting 4 to 5 days. On physical examination, there was a palpable dark-red, pigmented tumour located in the abdominal wall within Pfannenstiel incision scar. Gynaecological examination and transvaginal ultrasound showed no abnormalities within reproductive organs. The patient was qualified for a surgical procedure involving resection of the lesion in general anaesthesia. A wide local excision of the lesion with adequate 1 cm margin of healthy tissue was performed. Scar endometrioma involved rectus abdominis muscle fascia and thus wide fascia excision was performed. Side to side linear fascia closure was impossible so non-absorbable polypropylene mesh was used to close the defect. The skin was extensively undermined and mobilized up towards umbilical level cephalically and pubic symphysis caudally with careful preservation of the communicating perforator vessels. Standard subcutaneous suction drainage was used to minimize the postoperative complication of haematoma and the skin was closed with single non-absorbable sutures (Figure 1b). No perioperative antibiotics were used. The patient was discharged 2 days



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Figure 1. (a) Extensive caesarean scar endometriotic tumour at the time of diagnosis, (b) a day after surgery, and (c) 12 months after the surgery.

after surgery in good general and local condition. Skin sutures were removed after 10 days and wound was cleansed 3 times daily with octenidine dihydrochloride. The wound healed without complication. Pathology report confirmed external endometriosis. A 12- and 24-month follow-up showed no evidence of local recurrence, satisfactory cosmetic result and symptoms relief (Figure 1c).

Discussion

The most common site of extrapelvic endometriosis is caesarean section scar.⁵ Its pathogenesis involves mechanical iatrogenic implantation of endometrial cells directly into the surgical area.⁵ The pathognomonic symptoms include caesarean section scar, tumour and cyclic local pain exacerbated by menstruation.^{5,6} Such characteristic symptomatic triad should not present a diagnostic dilemma, however, differential diagnoses may involve fibromas, lipomas, suture granulomas, hernias, haematomas, lymphomas, desmoid tumours and sarcomas.⁷ Total surgical resection is considered to be the gold standard for both diagnosis and treatment of scar endometrial lesions.⁸ Surgical margin of at least 1 cm is recommended to prevent the risk of recurrence.⁹ In some cases, radical surgery requires extensive resection of a fascia and fragments of the rectus abdominis muscle, what may potentially lead to difficulty in repairing the abdominal wall defect, particularly in patients with large tumours. In the presented case, due to large infiltrative endometriotic tumour and substantial extensive fascia resection, a polypropylene mesh was implemented which is generally standard procedure if no tension-free fascial closure can be achieved. Abdominal wall reconstruction with synthetic mesh was performed to restore abdominal wall integrity and prevent postoperative hernia formation. According to recent consensus of nomenclature for defining the planes for the anterior abdominal wall mesh reconstruction, there are generally 5 different anatomical compartments for mesh placement: subcutaneous, interposition, retro-rectus, preperitoneal and intra-abdominal.¹⁰ In the presented case, polypropylene mesh was placed in the retro-rectus space, posterior to rectus muscles and anterior to the posterior rectus fascia. Although the application of synthetic mesh may cause an increased risk of complicated wound infections, synthetic mesh infections and erosions,¹¹ recommended perioperative management does not include standard

perioperative antibiotic use.¹² Standard local antiseptics application decreases the number of bacteria adhering to the biomaterial applied,¹³ and ameliorates scar appearance following abdominoplasty.¹⁴ In case of our patient, successful surgical treatment involves not only radical tumour resection and hernia prevention but also adequate wound closure ensuring satisfactory cosmetic results, which was most challenging. In most national public health services, accessibility of plastic surgery specialist is very limited. Thus, gynaecologic surgeon should be familiar with some basic abdominoplasty techniques and use of skin/musculocutaneous flaps. Reconstruction of the abdominal wall and wound closure is usually directed by the extent of resection and the possibility of subsequent surgical intervention. Vascularization, lymphatic drainage and sensory innervation always has to be taken into consideration to assure survival of transferred flaps. Blood supply of the inferior abdomen area particularly compromised during surgery is provided by perforating branches of the inferior epigastric vessels, the circumflex iliac artery and the external pudendal artery. Secondly, much efforts must be applied to minimize wound closure tensions by optimal flap design, extensive undermining and suturing technique. Planning abdominal wall reconstruction, we considered application of rectus abdominis muscle flap, anterolateral thigh musculocutaneous flap or partial abdominoplasty. Finally, having performed extensive perforator-vessel-sparing skin undermining, we could successfully implement partial abdominoplasty technique with tension-free skin closure. It has to be mentioned that such extensive skin flap dissection may be associated with higher local complication rate, that is, haematoma, seroma, wound dehiscence and infection. However, our patient did not present any previously described risk factors of abdominoplasty complications like overweight and obesity, tobacco smoking, diabetes mellitus, age ≥ 65 years.^{15,16}

Summary

The incidence of caesarean scar endometriosis is increasing constantly due to growing number of caesarean deliveries. Such lesions may reach considerable size and may involve surrounding structures, making surgical management more complex. Thus, gynaecologic surgeon should be familiar with some basic rules of skin/musculocutaneous flaps transposition and abdominoplasty.

Patient Consent

Written informed consent for patient information and images to be published was provided by the patient.

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REFERENCES

1. Bourgioti C, Preza O, Panourgias E, et al. MR imaging of endometriosis: spectrum of disease. *Diagn Interv Imaging*. 2017;98:751-767.
2. Nominato NS, Prates LF, Lauer I, et al. Caesarean section greatly increases risk of scar endometriosis. *Eur J Obstet Gynecol Reprod Biol*. 2010;152:83-85.
3. Danielpour PJ, Layke JC, Duric N, et al. Scar endometriosis – a rare cause for a painful scar: a case report and review of the literature. *Can J Plast Surg*. 2010;18:19-20.
4. Andolf E, Thorsell M, Källén K. Caesarean section and risk for endometriosis: a prospective cohort study of Swedish registries. *BJOG*. 2013;120:1061-1065.
5. Zhang P, Sun Y, Zhang C, et al. Cesarean scar endometriosis: presentation of 198 cases and literature review. *BMC Womens Health*. 2019;19:14.
6. Buscemi S, Maiorana A, Fazzotta S, et al. Scar endometriosis: not a rare cause for a painful scar. *Clin Ter*. 2021;172:129-133.
7. Nirula R, Greaney GC. Incisional endometriosis: an underappreciated diagnosis in general surgery. *J Am Coll Surg*. 2000;190:404-407.
8. Matei AM, Draghici-Ionescu AM, Cioplea M, et al. Skin endometriosis: a case report and review of the literature. *Exp Ther Med*. 2021;21:532.
9. Ozturk A, Kaya C, Bozkurtoglu H, et al. Scar endometrioma: an uncommon yet easily treated condition. *J Reprod Med*. 2016;61:249-253.
10. Parker SG, Wood CPJ, Sanders DL, Windsor ACJ. Nomenclature in abdominal wall hernias: is it time for consensus? *World J Surg*. 2017;41:2488-2491.
11. Ghazi B, Deigni O, Yezhelyev M, et al. Current options in the management of complex abdominal wall defects. *Ann Plast Surg*. 2011;66:488-492.
12. Orelia CC, van Hessen C, Sanchez-Manuel FJ, et al. Antibiotic prophylaxis for prevention of postoperative wound infection in adults undergoing open elective inguinal or femoral hernia repair. *Cochrane Database Syst Rev*. 2020;4:CD003769.
13. Rešliński A, Dabrowiecki S, Glowacka K, et al. The influence of octenidine dihydrochloride on bacterial biofilm on the surface of a polypropylene mesh. *Med Biol Sci*. 2013;27:41-47.
14. Matiasek J, Kienzl P, Unger LW, et al. An intra-individual surgical wound comparison shows that octenidine-based hydrogel wound dressing ameliorates scar appearance following abdominoplasty. *Int Wound J*. 2018;15:914-920.
15. Gutowski KA. Evidence-based medicine: abdominoplasty. *Plast Reconstr Surg*. 2018;141:286e-299e.
16. Brito ÍM, Meireles R, Baltazar J, et al. Abdominoplasty and patient safety: the impact of body mass index and bariatric surgery on complications profile. *Aesthetic Plast Surg*. 2020;44:1615-1624.