

The Effect of Diagnosis and Surgical Margin Safety on the Success of Treatment in Endometriomas after Cesarean Section

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ABSTRACT

Introduction: In our study, patients who applied for abdominal wall mass and pain after cesarean section and were examined and treated and diagnosed endometriosis were evaluated in terms of age, body mass index (BMI), number of cesareans, clinical signs, size of endometriosis and surgical characteristics, as well as therapy and results.

Methods: January 2001-December 2021 in our clinic after cesarean section, surgery due to a painful mass in the abdominal wall and pathologically diagnosed endometriosis cases were retrospectively investigated. Age, number of cesareans, clinical signs, size of endometriosis and surgical characteristics and therapy results were recorded. Four patients were diagnosed with endometriosis with a tru-cut biopsy. All patients underwent primary mass excision.

Results: A total of 14 patients were identified. The average age of the patients was 35.9 and the average BMI was 26.81. All patients were admitted with a painful mass at the cesarean site. Only four patients had multiple cesarean sections. Ultrasonography and abdominal computed tomography were evaluated. Desmoid tumor, foreign body reaction, granuloma, abscess and endometriosis were identified in their preliminary diagnosis. Endometriosis was established by tru-cut biopsy in four patients. Primary mass excision was performed for all the patients. In one patient, prolene mesh repair was performed, while in other patients primary repair was performed. In all patients, pathological diagnosis was reported as endometriosis ekstarna.

Conclusion: The diagnosis of endometriosis should be kept in mind when diagnosing patients with pain and/or mass complaints at the site of surgery after cesarean section.

Keywords: Endometriosis, desmoid tumor, hematoma, abdominal pain

Introduction

Endometriosis is defined as the presence of endometrial glands and stroma outside the uterine cavity (1). It has been reported that the incidence of endometriosis in women of reproductive age is around 5-15% (2). Endopelvic endometriosis; it develops more frequently in different structures such as ovaries, uterosacral ligaments, pelvic peritoneum, recto-uterine pouch, cervix, vagina and round ligament. It is rarely observed in extrapelvic structures such as the abdominal wall, urinary and gastrointestinal tract, skin, brain and lungs (3,4). Many theories have been proposed regarding the development of endometriosis. These theories include retrograde menstruation, metaplasia, venous-lymphatic metastasis, and mechanical implantation into the incision scar during surgery. The most common operations leading to endometriosis include hysterectomy, cesarean section, amniocentesis and episiotomy (5). The most common finding is palpable painful mass at the cesarean scar site during menstruation (6). The patient's history and physical examination are the most valuable steps for diagnosis. Various examination methods such as ultrasonography (USG), computed tomography (CT), magnetic

resonance, Doppler sonography and fine needle biopsy can be used as advanced examinations (7,8). Surgical resection of endometriosis externa remains the treatment of choice to prevent recurrence of the disease. The resection of a mass with a surgical margin of at least 10 mm is accepted as the best clinical practice (9,10).

Methods

This study was conducted in accordance with the recommendations of the Declaration of Helsinki governing biomedical research in humans. The study was approval by the İstanbul Atlas University Non-Interventional Scientific Research Ethics Committee (approval number: E-22686390-050.01.04-8485, date: 28.09.2021). Informed consent was obtained from the patients regarding the study.

Between January 2001 and December 2021, patients with a history of cesarean section, who were operated for mass in the pfhanensteil incision area, and whose pathological diagnosis was endometriosis were retrospectively analyzed. Age, BMI, clinical complaints, history of physical examination findings, diagnostic features, treatments and post-



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operative follow-ups and pathological features of the patients were evaluated.

Statistical Analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 24.0 for Windows (IBM, Armonk, NY). Continuous variables are presented as mean \pm standard deviation, whereas categorical variables were shown as numbers and percentages

Results

A total of 14 patients were included in the study. The mean age of the patients was 35.9 (28-44). BMI indexes were found to be 26.81 kg/m² on average.

Most patients 71.43% (n=10) were admitted to the hospital with a painful mass with a cyclic course that became evident during menstruation at the site of the old cesarean section, while the remaining 28.57% (n=4) presented to the hospital because of palpable stiffness. Four patients had a history of more than one section. A hard painful mass was detected in the section area as an examination finding in all patients. It was stated that all the masses were single and isolated and adhered to the surrounding tissue. The masses were also evaluated with radiological diagnostic tools such as USG and CT. While only USG was performed in four patients, only CT was performed in 10 patients. In one patient, both USG and CT were performed.

The diameter of the masses was found to be 3.48 (1.4-6.0) cm radiologically. Radiological preliminary diagnoses were endometrioma, desmoid tumor, foreign body reaction, granulation tissue, abscess, and hematoma (Figure 1). Four patients were diagnosed with endometriosis by tru-cut biopsy. All patients were operated through the old phanensteil incision scar.

A firm mass limited to the abdominal wall, fixed to the surrounding tissue, was detected in all patients. The masses were excised with a margin of at least 10 mm in all patients (Figure 2). While repair was performed with prolene mesh in one patient due to the size of the defect, primary repair was performed using non-absorbable sutures in all other patients. The mean tumor diameter detected per operatively was 4.53 (2.5-6.5) cm. The mean hospital stay was 1 day in patients who had no post-operative problems. The pathological diagnosis of all patients was defined as endometriosis externa (Figure 3).

No recurrence was observed in the follow-up of the patients for 1 year or more. One patient was operated after USG and CT was performed due to the development of 2 cm mass with suspected recurrence in the operation area. A totally subtracted pathological evaluation was reported as fibrosis.

Discussion

Endometriosis implants that develop in the subcutaneous tissue of surgical scars most commonly occur after gynecological and obstetric procedures, including cesarean section, hysterectomy, cystectomy, tubal

Table 1. Patients with endometriosis in the abdominal wall

Patients no	Age	BMI	Radiological findings on the abdominal wall	
1	36	27.92	CT	4 cm mass on the left sides. Endometriosis?
2	37	27.99	CT	4x3x2.5 cm mass on the left side. Desmoid tm, granulation?
3	28	23.53	USG	35x21x32 mm hypochoic solid mass on the left side.
4	38	26.72	USG	28 mm heterogeneous hypochoic mass in the fatty tissue on the left side.
5	37	22.76	USG	25x20 mm well-circumscribed hypochoic heterogeneous mass on left side. Endometrioma.
6	35	32.15	CT	21x19x23 mm mass on the right side and surrounded by dirty tissue. Desmoid tm, abscess, hematoma?
7	28	30.48	CT	26x21x22 mm mass on the right side and suspect contrast uptake. Endometrioma?
8	43	23.95	USG	35x17 mm mass on the midline. Endometriosis, desmoid tm?
9	36	29.74	CT	35x19 mm solid mass on the left side and mild contrast uptake. Endometriosis, desmoid tm?
10	42	30.8	USG	30x22 mm mass on the midline. Endometriosis?
11	44	24.26	CT	3.5 cm solid mass on the right side. Desmoid tm, endometriosis?
12	33	23.94	CT	6x3 cm mass on the left side. Endometriosis?
13	38	28.63	CT	4 cm hypochoic mass on the right side. Endometriosis?
14	28	22.59	CT	13x14x14 mm mass with irregular edges on the left side. Endometriosis ?
Average	35.93	26.82		

Stiffness and pain in the abdominal wall were found in all patients as presenting complaints.

Endometriosis externa was found on pathological diagnosis in all patients

Mesh was used with primary repair in only a patient.

Primary repair was sufficient in all other patients.

All the patients were discharged after one day of hospitalization.

The smallest one was 1.4 cm, the largest was 6 cm/diagnosed by CT in 9 patients and by USG in 5 patients

BMI: Body mass index, CT: Computed tomography, USG: Ultrasonography

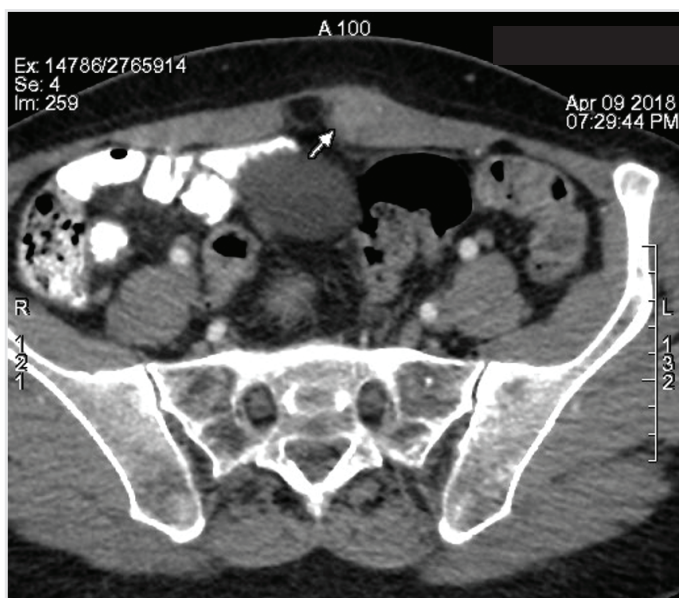


Figure 1. Endometrial mass on computed tomography scan

ligation, and amniocentesis (11). Cyclic or noncyclic pain was noted as the main symptom, reported by more than 80% of patients in the cohorts of Uçar et al. (9) in Turkey, and Zhang and Liu (12). In our study, all the patients applied because of mass in the cesarean section, and 71.43% (n=10) of them presented with prominent mass and pain during their menstrual period. Ultrasound and CT, particularly clinical examination, are the most reliable and cost-effective imaging techniques for the diagnosis of endometriosis externa. Incisional hernia, hematoma, abscess, cyst, or lipoma should be considered in the differential diagnosis (13,14). In appropriate cases, tru-cut biopsy can be performed for pathological diagnosis. It has been shown that approximately 26% of patients may have deep infiltration (12). In our study, USG, CT and tru-cut biopsy methods were used in the diagnosis of endometriosis externa. In the differential diagnosis, endometrioma, desmoid tumor, foreign body reaction, granuloma, abscess, and hematoma were found.

Local wide surgical excision with a margin of at least 10 mm is considered good clinical practice as the first choice for treating patients with endometriosis externa (7,9,10,15). Depending on the size of the defect, repair of the formed defect can be done using primary repair or prolene mesh (15). In our study, prolene mesh was used in one patient and primary repair was performed in 13 patients using nonabsorbable sutures. In a study by Francica (16), the mean lesion size was 41 mm for large endometriomas and 18.2 ± 5.17 mm (range: 7-26 mm) for small endometriomas. Tumor size can be difficult to diagnose; According to Gajjar et al. (17) gave a variation of the palpation score of 50x40 mm, but later using ultrasound found that the nodules had three dimensions of 18x17x17 mm. Additionally, in a study investigating the location of the tumor according to the midline, left localization was found to be more common (18). In our study, the mean tumor diameter was found to be 3.48 (1.4-6.0) cm radiologically, and 4.53 (2.5-6.5) cm in per-operative measurement. It was determined that the placement was more on the left (n=8).



Figure 2. Excision material

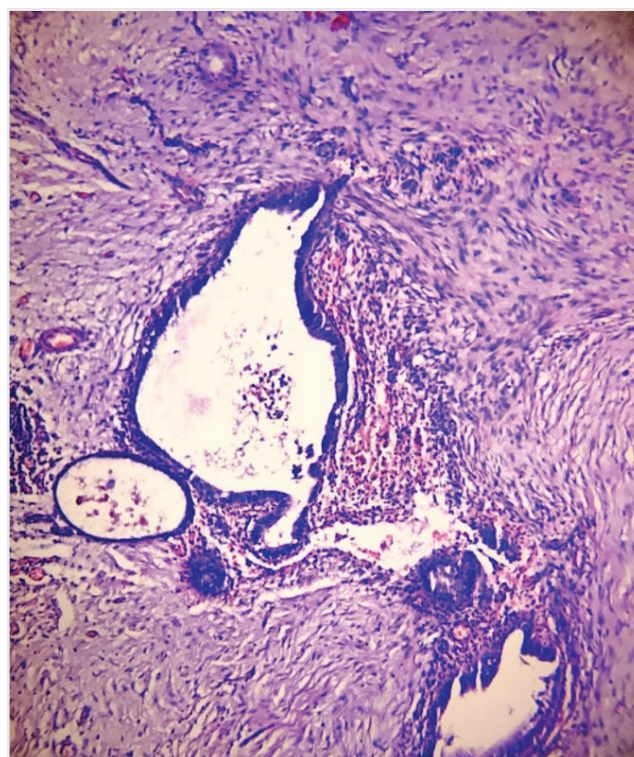


Figure 3. Hematoxylin and eosin staining 40x10 endometriosis

Study Limitations

This research, however, is subject to several limitations. The first is that the study included a limited number of patients. The second is that it is a retrospective study, so there is a problem in the documentation of the patients.

Conclusion

Endometriosis externa should be considered in the foreground in patients who complain of painful mass during menstruation at the scar sites after cesarean section, and total excision of the mass with a safe margin should be considered for treatment after differential diagnosis.

Ethics Committee Approval: The study was approved by the İstanbul Atlas University Non-Interventional Scientific Research Ethics Committee (approval number: E-22686390-050.01.04-8485, date: 28.09.2021).

Informed Consent: Informed consent was obtained from the patients regarding the study.

Peer-review: Externally peer-reviewed.

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