Case report

Extrapelvic endometrioma presenting as acute incarcerated right inguinal hernia in a postpartum patient

Erum Azhar,^{1,2} Salma M Mohammadi,³ Fauzan M Ahmed,³ Abdul Waheed³

¹Department of Public Health Sciences, Penn State Health Milton S Hershey Medical Center, Hershey, Pennsylvania, USA

²Department of Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, New York, USA

³Family Medicine Residency Program, WellSpan Good Samaritan Hospital, Lebanon, Pennsylvania, USA

Correspondence to

Dr Erum Azhar,
eazhar@pennstatehealth.psu.edu

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SUMMARY

A 33-year-old postpartum patient, who had an uncomplicated repeat caesarean section 4 weeks prior, presented with a 2-day history of acute right lower quadrant, incisional and groin pain. She was found to have a palpable tender lump in the right groin. A CT scan with contrast identified fluid along the anterior abdominal wall of the right lower quadrant (inguinal region) measuring about 1.7 cm, a preliminary diagnosis of an incarcerated inguinal hernia was made and the patient underwent immediate surgery. The hernia sac was dissected free and had chocolate cyst that was confirmed to be endometrioma on histopathology. The hernia defect was repaired. Postoperative, the patient did well and was discharged home. We emphasise to consider this differential diagnosis of extrapelvic inguinal endometrioma in reproductive-aged women with or without history of endometriosis especially in a post-caesarean patient who has atypical presentations.

BACKGROUND

Endometriosis is a common gynaecological diagnosis in women of reproductive age, and affects about 5%–10% of women.¹ It is defined as normal endometrial glands and stroma outside of the uterine cavity.² One presentation of endometriosis is in the form of an endometrioma, which is actually an endometrial cyst containing thick, brown, tar-like fluid and is often referred to as a 'chocolate cyst.' These cysts and endometrial deposits can be found in extrapelvic areas and are often adherent to surrounding structures and surgical scars and are thus misdiagnosed as other types of masses including lipoma, incisional hernia and abscess until further exploration is done by general surgeons; to

whom it may pose a diagnostic challenge, since it is not well recognised among general surgeons.³

Husain *et al* reported endometriosis presenting as a long-standing inguinal hernia.² There is a case report of Pfannenstiel incisional endometrioma in the literature presenting as acute incarcerated incisional hernia, the patient presented with a tender mass directly at the corner of the healed left Pfannenstiel incision 4 years and 8 months after her caesarean section with no history of endometriosis.⁴ Our patient presented 4 weeks after a repeat caesarean section with acute right lower quadrant (RLQ) tenderness, and on examination, there were no masses on the Pfannenstiel incision to indicate suspicion for incisional endometrioma; however, there was a palpable tender lump in the right groin that favoured towards inguinal pathology, with CT scan suspicious for acute incarcerated inguinal hernia, the hernia sac had chocolate cyst that was confirmed to be endometrioma on histopathology. Our patient had a history of endometriosis and had a surgical history of an ovarian cystectomy done for endometrioma.

To our knowledge, there is lack of reported cases of endometrioma presenting as acute incarcerated inguinal hernia in a postpartum patient in gynaecological literature. Our case is unique since the patient had a recent caesarean section and had surgical scar in abdomen so it posed the double decision dilemma to differentiate the mass from incisional hernia and incisional endometrioma (surgical scar endometrioma) from inguinal hernia and inguinal endometrioma.

In this case report and review of literature, we emphasise to consider the differential diagnosis of extrapelvic inguinal endometrioma in reproductive-aged women by emergency room physicians, gynaecologists and general surgeons, especially in a post-caesarean patient who has atypical presentations with or without history of endometriosis.

CASE PRESENTATION

A 33-year-old gravida 2, para2, postpartum patient presented to our emergency department with a 2-day history of acute RLQ abdominal pain. The patient had a repeat caesarean section 4 weeks prior to presentation. She described the pain as sharp, constant and rated as moderate to severe. She denied any fever, nausea or vomiting. She had complained about incisional pain at 1 week postoperative visit and was given post-op pain medications.

Figure 1 Pelvic ultrasound 6 months prior showed right ovarian cystic structure with a septation and irregular walls measuring approximately 6.1 cm × 1.8 cm × 2.1 cm (outlined by orange arrow).

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Figure 2 MRI pelvis without contrast, T2 image, 6 months prior showed a late term intrauterine gestation with anterior placenta (orange arrow with text). There is fluid in the right femoral canal that measures 4.3 cm × 2.1 cm × 3.8 cm (outlined by orange arrow and text on right).

Her medical history included a similar episode of RLQ pain that occurred 5 months prior in the antepartum period. Pelvic ultrasound (figure 1) done at that time showed a right ovarian cystic structure with septations and irregular walls measuring approximately 6.1 cm × 1.8 cm × 2.1 cm. An MRI of the abdomen/pelvis (figure 2) showed fluid in the right femoral canal with suspicion for femoral hernia. The patient was seen by general surgeon at that time and interval surgery postpartum was recommended.

Patient's surgical history was significant for laparoscopic left ovarian cystectomy for endometrioma, lysis of pelvic adhesions and chromotubation for bilateral tubes as patient had a long history of secondary infertility and had an intrauterine insemination (IUI) done for conception for this second pregnancy, however, denied any cyclical pain prior to getting pregnant for this second pregnancy.

Physical examination at this presentation revealed severe RLQ and incisional tenderness with guarding and a palpable lump in the right inguinal area.

INVESTIGATIONS

All laboratory tests done in the ER were unremarkable with no leukocytosis on complete blood count. A CT scan with contrast (figure 3) was obtained in view of the excruciating pain and it showed fluid along the anterior abdominal wall of the RLQ (inguinal region) measuring about 1.7 cm. Both adnexa were reported normal.

Figure 3 CT scan of the abdomen/pelvis with contrast. Axial view on the right showing 1.7 cm fluid collection within the anterior abdominal wall of the right lower quadrant (outlined by orange arrow in the inguinal region). Coronal view on the left showing same fluid outlined by arrow.

Figure 4 Endometrial stroma embedded in fibrous hernia sac; ×200 (outlined by black arrow and text).

DIFFERENTIAL DIAGNOSIS

As the patient presented with acute abdominal pain postpartum, the differential was wide including gynaecological and non-gynaecological causes of acute abdomen. This included but were not limited to ovarian torsion, haemorrhagic cyst, appendicitis, haematoma and abscess due to close proximity to caesarean scar and recent surgery, seroma, lipoma, enlarged lymph nodes, incarcerated inguinal hernia, pelvic congestion syndrome, malignancy and abdominal/incisional wall endometrioma.

TREATMENT

The patient was admitted for right inguinal hernia repair for suspected right incarcerated inguinal hernia. She was taken to operating room by general surgery team for immediate open direct hernia repair surgery. After making incision directly over the bulge, dissection was carried to expose the inguinal canal and round ligament along its lower edge and the sac was dissected off the round ligament. The hernia sac was dissected free and it included a cystic structure. The cystic structure was opened and it revealed dark chocolate-like fluid that was sent to frozen pathology, which showed hemosiderin laden macrophages and endometrial stromal-like cells suspecting the cyst to be endometrioma (figure 4). The indirect hernia defect was repaired.

OUTCOME AND FOLLOW-UP

The patient did well postoperatively and was discharged home. She was seen in the office on postoperative day 10 and was doing well. The final histopathology confirmed the excised hernia sac as endometrioma (figure 5).

DISCUSSION

Endometriosis is a common, non-malignant process of endometrial glands and stroma harbouring outside of the uterine cavity, sometimes manifesting as masses or cysts called endometriomas.⁵ Endometriomas are oestrogen-dependent and most commonly affect women during their reproductive hormonal stages, with diagnosis usually occurring in the third decade.¹³

The most common location of endometriosis is endopelvic but rare extrapelvic endometriosis has been reported in the literature.⁶ Some cases of endometriosis involving the gastrointestinal tract, the urinary tract, the respiratory system, the diaphragm, the pleura and the pericardium has been reported.⁶ Candiani *et al*⁷ reported six cases of inguinal endometriosis where site of

Figure 5 Endometrial stroma embedded in hernia sac; $\times 400$ (outlined by black arrow and text).

lesion was the round ligament. Rare cases of extrapelvic endometriosis involving the abdominal wall and presenting as masses have also been reported in women of reproductive age, particularly in women with prior caesarean or surgical scars.^{2 6 8 9}

Endometriosis, one of the mysterious gynaecological diseases, has various pathogenesis theories in the current scientific literature.^{6 10–12} It is suggested that endometriosis has multifactorial components that may range from genetic, immune, hormonal and environmental components.¹¹ The common theories are the theory of metaplasia, the transplantation theory of the dispersion of endometrium (retrograde menstruation), the theory of induction and the theory of benign metastasis (lymphatic, haematologic).

The theory of metaplasia proposes that the normal peritoneal mesothelium transforms to endometrial tissue by metaplastic changes. The theory of transplantation suggests that endometrial tissue gets implanted to peritoneal sites by retrograde menstruation. The induction theory proposes that the undifferentiated cells in the mesothelium get differentiated into endometrial cells via an inductive stimuli that is endogenous and could be hormonal or immunologic. Furthermore, the evidence of distant endometriotic lesions favours the lymphatic and haematological dissemination of endometrial cells favouring the theory of benign metastasis.¹²

Typical presentation of an endometrioma is a woman of reproductive age with a history of obstetrical or gynaecological surgery who presents with abdominal pain or pelvic pain secondary to a mass or nodule.² The pain is usually directly correlated with the patient's menstrual cycle. A history of endometriosis or previous caesarean section, in particular, should raise clinical suspicion. Of note, our patient had random episode of abdominal pain during pregnancy and then presented acutely postpartum with tender lump in the groin area in close approximation to a recent caesarean scar. She also had a positive history of previous endometrial disease. Thus, posing a diagnostic dilemma.

MRI should be the imaging modality of choice for locating the mass, developing differential diagnoses and ruling out other conditions such as lipomas, hernias and malignant masses.

Treatment of extrapelvic endometriomas should revolve around relieving symptoms, such as pain and removal of extrapelvic chocolate cysts since medical therapies are ineffective in these cases.² It is important to have adequate excision to prevent recurrence.⁸

In this case report, our patient had a surgical repair of suspected incarcerated inguinal hernia, postpartum, a month after delivery of liveborn infant via repeat caesarean section, which was confirmed to be an endometrioma on pathology, with good surgical outcome.

Learning points

- ▶ Extrapelvic endometrioma is a rare presentation of endometriosis.
- ▶ A medical history of endometriosis, infertility and gynaecological surgery should raise suspicion.
- ▶ Inguinal or round ligament endometrioma (figure 3) should be included in the differential diagnosis in all female patients presenting with a swelling in the groin or abdominal wall and should be differentiated from incisional endometrioma by utilising imaging modalities especially CT scan and MRI.
- ▶ We emphasise the emergency room physicians, gynaecologist and general surgeons to have a high index of suspicion especially in postoperative postpartum women who present with atypical presentations.

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