

Differential diagnosis of an incarcerated inguinal hernia: extraperitoneal endometrioma of the round ligament

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Abstract

General surgeons may encounter endometriosis when extraperitoneal forms of the disease mimic a symptomatic inguinal hernia in premenopausal women. Diagnosis is often difficult, especially in the absence of menstrual symptoms, and is often made during surgical groin exploration. We present a case of extraperitoneal endometrioma simulating a symptomatic inguinal hernia and discuss the pathogenesis and management.

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Keywords

Inguinal hernia; extraperitoneal endometrioma.

Case report

A 46-year-old lady presented to the Emergency Department of QE II Hospital Queensland Australia in late 2001 with a 2 day history of constant localised right iliac fossa pain. The pain was aggravated by movement and coughing but relieved by drawing her knees upwards and lying still. She had no gastrointestinal or genitourinary symptoms and was not systemically unwell. There was no history of intra-abdominal or pelvic surgery.

Her last menstrual period had finished 5 days before presentation. She had been started on oral contraceptive pills 3 months previously to control 'menstrual migraines'. She was a Gravida 2, Para 2 (G2P2) and was previously diagnosed with an incompetent cervix, having been hospitalised for both of her pregnancies from the 20th week. She denied any symptoms of dysmenorrhea or menorrhagia.

On examination, she was afebrile and had normal routine observations. Palpation of her abdomen revealed mild tenderness in the right iliac fossa and inguinal region. Bowel sounds were normal, the hernial orifices were clear, and vaginal and rectal examinations were unremarkable. No other abnormalities were detected on physical examination. Routine full blood examination (FBE), urea and electrolytes (U & Es), liver function test (LFTs), ward test urine (WTU), abdominal X-ray and erect chest X-ray were all normal.

Her pain improved with simple oral analgesia and a provisional diagnosis of lower abdominal musculoskeletal pain was made. She was discharged with oral nonsteroidal analgesia, to be followed up with a pelvic ultrasound the next day to exclude any sinister underlying pelvic or lower intra-abdominal pathology if the pain did not settle.

The patient presented again the next day with persistent symptoms of mild-to-moderate constant pain in the right inguinal region. On examination by the attending general surgical

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Fig. 1. CT scan, with oral and intravenous contrast, of the lower abdomen and pelvic area.

registrar, a small irreducible and poorly defined tender lump 1.5 cm in diameter was felt 1 cm above the midpoint of the inguinal ligament.

Pelvic ultrasound excluded any uterine, ovarian or adnexal pathology. The scan did reveal a small hypoechoic lesion of 1.6 cm in maximal diameter, lying medial to the inferior epigastric vessels, in the right inguinal region. The radiologist's impression was of a small irreducible direct inguinal hernia.

Since the clinical findings were atypical and there was no definite sign of strangulation, the patient was treated conservatively for 24 h. A Computer Tomography (CT) scan with oral and intravenous contrast of her lower abdomen and pelvic area was performed the next day (Fig. 1) and this showed a low density area with an enhancing rim in the right inguinal region medial to the inferior epigastric vessel and lying lateral to the inferior insertion of the rectus abdominis. There was no evidence of bowel obstruction but there were inflammatory changes around the area suggestive of a strangulated direct inguinal area.

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Given her persistent symptoms and the imaging results, a surgical exploration of her right inguinal canal was performed. Intraoperatively, a 1.5 cm cyst containing brown fluid suggestive of endometriosis was noted in the middle of her round ligament. It was resected. Histopathological analysis revealed fibrovascular tissue which contained bundles of smooth muscle consistent with the appearances of the round ligament. Within the tissue was a cystic space lined by haemorrhagic endometrial epithelium and stroma, confirming the lesion as an endometrioma. Postoperatively, the patient recovered quickly and was discharged the next day to be followed in gynaecology outpatients for the overall management of her endometriosis.

Discussion

Endometriosis has been described with increasing frequency as an incidental finding at laparoscopy over the last 20 years, and affects 8-15% of women of reproductive age^[1,2]. This does not represent an increase in the incidence of the disease, but more likely a higher index of diagnostic suspicion. The presenting symptoms depend upon the anatomical region involved. However, the occurrence of inguinal endometriosis involving the extraperitoneal portion of the round ligament is rare, occurring in about 0.3% of patients with pelvic endometriosis^[3,4]. Extraperitoneal endometriosis can occur in the absence of genital disease as in our case. Symptoms and signs engendered by such endometriomata have been mistaken for hernias (both inguinal and femoral), lymphadenopathy, soft tissue tumours of the extremities, iliopectineal bursitis, adductor tendinitis, and arthritis of the hip. Other diagnostic possibilities for an inguinal mass in women include lipoma, hydrocele of the canal of Nuck, vascular aneurysmal dilatations, varicoceles, and neurofibroma^[4].

Three main theories have been put forth to explain the pathogenesis of endometriosis. The implantation theory suggests that menstrual blood containing fragments of endometrium might pass along the Fallopian tubes in a retrograde manner and thus

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reach the peritoneal cavity. The coelomic metaplasia theory suggests that endometriosis originates in the coelomic membrane via a process of metaplasia following a metaplastic induction factor. The lymphatic and vascular dissemination theory proposes that viable endometrial cells gain entry to open basal lymph and blood vessels and embolise to ectopic sites, in order to explain the distant sites of endometriosis^[2].

Endometriosis in the inguinal area was first described by Cullen in 1896, and since that time approximately 30 cases (mostly in obstetric and gynaecology journals) have been reported, all in women in their reproductive years^[5]. 90% of such endometriomas arise from the right round ligament, as in our case^[6]. Some authors use the lymphatic and vascular dissemination theory to explain endometriosis involving the extraperitoneal portion of the round ligament^[7]. This could be because the lymphatic vessels originate in the uterus and run along the round ligaments^[8]. This probably accounts for the rare incidence of ovarian cancer metastasising to the inguinal nodes^[9]. However, it does not explain its predominant presence on the right. Asymmetrical lymphatic drainage in favour of the right inguino-cruical region would provide a logical explanation, but anatomical descriptions and oncological observations do not seem to support this hypothesis^[10]. Some authors suggest that the sigmoid colon protects the left groin, which is also felt to account for the prevalence of right-sided inguinal hernias^[11].

Symptoms of extraperitoneal endometriosis, often diverse and puzzling, usually result from functioning endometrial tissue or scarring at the affected site. The location of the endometriosis, not the size of the implant, determines the symptoms. Many women with extensive endometriosis are asymptomatic, yet a small focus of disease in a particular location can produce disturbing problems^[12].

Clues to the presence of endometriosis include pain, bleeding or menstrual dysfunction. It is also reported to be associated with infertility, but our patient is a G2P2. Noncyclical symptoms can confuse the clinician. It has been proposed that these extragenital lesions, especially those further away from the uterus, tend to lose their hormonal receptors and response, hence the lack of cyclical symptoms^[6,13]. Ultrasonography has been used as a diagnostic aid and usually reveals a cystic-solid lesion. CT scan usually demonstrates a mass which is mainly solid in nature and follows the course of the round ligament^[11,14].

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Treatment is surgical excision of the mass. Local recurrence at the surgical scar has been reported^[15].

Teaching point

Since extraperitoneal endometrioma can mimic an incarcerated inguinal hernia, it is important that general surgeons are familiar with this condition. Awareness of endometriosis is essential to diagnosis and must be considered in any woman of reproductive age with atypical presentation of inguinal hernia. Furthermore, according to a literature review of the 30 documented cases, 32% were associated with an inguinal hernia^[6]. In addition, malignant transformation has been reported to occur in foci of endometriosis. Aggressive mixed clear cell and endometrioid carcinoma resulting in significant mortality despite chemotherapy have been reported^[16]. Preoperative diagnosis is often difficult and groin exploration and excision of lesion are usually diagnostic and curative as suppressive hormonal therapy alone as treatment is usually unsatisfactory. However, the patient should be referred for a full gynaecological assessment to investigate and manage any concomitant endometriosis elsewhere.

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