Acute torsion of a wandering spleen causing acute abdomen
游走脾臟急性扭轉引至的急腹症

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Wandering spleen is a rare clinical entity characterised by splenic hypermobility resulting from laxity or maldevelopment of the suspensory gastrospenic, splenorenal, and phrenocolic ligaments. Diagnosis is quite difficult because of the lack of symptoms and signs until splenic torsion have occurred. In this article, we present and discuss a 23-year-old caucasian woman presenting with acute abdomen, diagnosed as splenic torsion by ultrasound and magnetic resonance imaging and managed surgically. (Hong Kong j.emerg.med. 2011;18:34-36)

游走脾臟是一種罕見的臨床個案，原因是因為胃脾繫帶、脾腎繫帶和膈結腸繫帶的鬆弛或發育不良造成脾臟的不穩定性增加。由於缺乏症狀和體徵，診斷是十分困難的。一般要等到脾臟扭轉時才能診斷出來。在這篇文章中，我們將討論一個23歲的白人婦女患有急腹症，由超聲波和核磁共振診斷為脾臟扭轉和外科手術治療的案例。

Keywords: Acute abdomen, Torsion, Wandering spleen

關鍵詞：急腹症·扭轉·游走脾臟

Introduction

Wandering spleen is a rare clinical entity characterized by splenic hypermobility resulting from laxity or maldevelopment of the suspensory gastrospenic, splenorenal, and phrenocolic ligaments. It usually occurs between 20 and 40 years of age, and most of the cases are women.¹ The clinical presentation of a wandering spleen is variable, that is, it could present as an asymptomatic abdominal or pelvic mass, or as an acute abdomen secondary to torsion of the spleen.² Diagnosis is quite difficult because of the lack of symptoms and signs until splenic torsion have occurred.

In this article, we present and discuss a 23-year-old caucasian woman presenting with acute abdomen, diagnosed as splenic torsion by ultrasound (US) and magnetic resonance imaging (MRI) and managed surgically.

Case report

A 23-year-old caucasian woman presented to the emergency department with a 3-day history of acute periumbilical and left lower quadrant abdominal pain. The pain was intermittent, poorly localized, and was non-colicky and non-radiating in nature. The past medical history was unremarkable except for vague recurrent periumbilical and left lower quadrant pain for the last two months. On physical examination, her body temperature was 38°C, heart rate was 90 beats/min, and blood pressure was 110/60 mmHg. On palpation, the abdomen showed diffuse guarding without rebound tenderness. A firm tender mass was palpable in the lower abdomen on the left side. Plain radiographs in

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the supine and erect positions were normal. Routine biochemical parameters were normal except for a mild leukocytosis (15,000/mm³) and anaemia (haemoglobin: 9.7 g/dL). Urinary analysis was normal. During ultrasonographic examination, the left upper quadrant was found to be filled with bowel loops and the spleen could not be located. An enlarged spleen extending from lower polar region of the left kidney to the pelvis was seen. The splenic parenchyma showed homogeneous normal echogenicity. Abdominal MRI — MRI angiography was performed demonstrating the absence of splenic tissue in the left upper quadrant. The large ectopic spleen was located in the lower abdomen below the level of the left kidney. On all sequences the signal intensity of the parenchyma and the contours of the spleen were normal. No omental or peritoneal adhesions were observed. The splenic vessels were dilated and tortuous, demonstrating a whorl-like appearance with the surrounding fat at the splenic hilus (Figure 1). Emergency laparotomy confirmed the presence of a large pelvic spleen twisted out of 360° on its long pedicle, with partial infarction of the upper region (Figure 2). No suspensory ligaments were found, and the splenectomy was performed. The postoperative course was uneventful and the patient was discharged on the seventh postoperative day without any complication.

**Discussion**

The absence or laxity of the peritoneal attachments of the spleen results in splenic hypermobility known as wandering spleen, also known as ectopic spleen, proptotic spleen, floating spleen, displaced spleen, and aberrant spleen. The aetiology of wandering spleen is controversial, and acquired and congenital forms have been described. While some authors stated that abdominal laxity, multiparity and hormonal effects of pregnancy cause laxity of the ligaments of the spleen, others reported that an embryologic maldevelopment of the ligaments causes absence of some or all of the ligaments of the spleen.1,3 Although more common among males in childhood, its prevalence is more common among females by the time they reach childbearing age.4 It is quite difficult to estimate the exact incidence of wandering spleen, it accounted for less than 0.5 % of splenectomies in reported series.5

The clinical presentation of a wandering spleen can be variable. Affected patients may be asymptomatic and this condition may be discovered incidentally as an abdominal mass on physical examination or on imaging for other unrelated reasons. Patients may have mild intermittent abdominal pain due to splenic congestion with intermittent torsion and spontaneous detorsion, or may present with an acute abdomen due to torsion of the splenic pedicle with subsequent infarction.6 The
initial clinical symptoms include nausea, vomiting, fever, leukocytosis, peritoneal signs, and a palpable mass in the abdomen or pelvis mimicking an ovarian torsion, appendicitis, or cholecystitis. Patients may also present with complications associated with other intra-abdominal organs, such as gastrointestinal obstruction secondary to splenic adhesions or a long splenic pedicle, pancreatic necrosis secondary to compression of the pancreatic tail, pancreatitis secondary to displacement of the pancreatic tail into the splenic hilum, bleeding from gastric varices secondary to splenic venous hypertension, and urinary symptoms secondary to compression of the ureters or the urinary bladder.\(^2\)

The clinical diagnosis may be quite difficult and haematological and biochemical investigations are usually non-specific. Non-invasive imaging procedures such as US, computed tomography (CT) scanning and MRI are usually diagnostic. Plain abdominal films, barium enema studies, and scintigraphy are often nonspecific.\(^6\)\(^,\)\(^7\) Angiography can reveal ectopic spleen location and splenic torsion, but is invasive and not essential for diagnostic purposes.\(^7\) Ultrasound plays an important role and is the selective diagnostic method. The sonographic appearance of the ectopic spleen is the presence of a homogenous hypoechoic mass and empty splenic area, while CT shows a homogenous, unenhanced mass. The Doppler ultrasound has proven to be an useful tool indicating the presence or absence of blood flow in the splenic pedicle.\(^8\) MRI, a reasonable alternative to CT, confirms the diagnosis of a complicated wandering spleen. The lack of splenic tissue in the left upper quadrant and the ectopic pelvic spleen were easily detected on T1- and T2-weighted sequences. The viability of the splenic parenchyma was assessed by T1-weighted MRI (with and without contrast medium administration) and showed a partial infarction. This information is useful for therapeutic decision-making.\(^9\) The primary advantages of MRI over CT, especially in paediatric patients are the lack of ionizing radiation and elimination of the risks of contrast reaction.\(^10\)

Recommendations in the literature for the management of wandering spleen varied. Traditionally, splenectomy has been the treatment of choice for symptomatic wandering spleen. Splenopexy is suggested for cases with significant risk of overwhelming post-splenectomy sepsis such as in young children. However, in the presence of splenic infarction or necrosis, splenectomy is usually required.\(^11\) Recently, laparoscopic procedures have been introduced for splenic surgery, and it has been shown to offer the benefits of minimally invasive surgery.

**Conclusion**

Wandering spleen is a rare disease but it should be kept in mind for the differential diagnosis of acute abdomen, especially for young females with a palpable intraabdominal mass. An increased awareness of this rare condition, and timely use of imaging modalities, can help in the accurate diagnosis of acute torsion of wandering spleen.

**References**