Torsion of the greater omentum associated with a left inguinal hernia

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Torsion of the greater omentum is a rare cause of acute abdominal pain and diagnosing it preoperatively is often difficult [1,2]. Clinically, it can resemble appendicitis, cholecystitis, adnexal torsion, torsion of the epiploic fringe or diverticular perforation [1]. Radiological investigations (abdominal ultrasound and computed tomography [CT]) provide the diagnosis and show the specific signs of torsion of the greater omentum [2,3]. Here we report a case of torsion of the greater omentum associated with a strangulated left inguinal hernia.

Clinical case

A 26-year-old man came to the emergency department with abdominal pain that had begun two days before. His medical history included an untreated left inguinal hernia. The abdominal pain had initially started in the left inguinal and hypogastric regions and then become diffuse. The patient had no intestinal obstruction and was afebrile. There was peri-umbilical guarding and a painful left inguinal hernia. The right inguinal ring was free. His laboratory results revealed a leukocyte count of 10,500 G/L, and C-reactive protein was 192 mg/L. An abdominal X-ray with no preparation was normal. Given this atypical clinical picture, an emergency abdominal CT scan was performed. It showed a sub-parietal, superficial, intra-abdominal abnormality indicating pathologic infiltration of the omentum and rotational movement suggesting torsion of the greater omentum (the whirl sign) (Fig. 1) [4,5]. The omental fat was dark, infiltrated, had a pathological appearance and there was a strip of intraperitoneal effusion. The distal end of the omental apron was by the inguinal ligament and seemed to be alongside the spermatic cord (Fig. 2).

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Emergency exploratory laparoscopy was performed and found an omental volvulus between the transverse colon and the inguinal ring. After reducing the left inguinal hernia, the necrotic greater omentum was resected. The left inguinal hernia was then repaired via the inguinal route using the Lichtenstein technique [6]. Post-operative care was without complication.

**Discussion**

Torsion of the greater omentum is a rare aetiology for acute abdominal pain [1,2]. It most frequently affects the right side of the omentum [1] and can thus mimic appendicitis, cholecystitis or torsion of the epiploic fringe. The condition more frequently occurs in this region because the omentum is longer on the right side, more mobile and less richly vascularised with poor collateralisation [7].

Torsion of the greater omentum can be primary (or idiopathic) or secondary. Primary torsion is associated with anatomical omental abnormalities such as bifid omentum, accessory omentum or considerable epiploic venous circulation. Secondary torsion is more frequent, and may be associated with adhesions, cysts, tumours, hernias or even- tration, resulting in omental rotation between two fixed points, as in our observation [3]. The factors triggering torsion of the greater omentum are common to both primary and secondary types. Apart from obesity, they are factors that sharply increase intra-abdominal pressure, such as eating a large meal, sneezing, coughing or suddenly changing position [1,3,4]. In our patient, there was complete torsion.

*Figure 1.* Abdominal computed tomography imaging (CT): axial slices at the colic origin of the greater omentum (a) and in the lower part of the abdomen (b) showing the whirl sign.

*Figure 2.* Abdominal computer tomography imaging (CT): coronal slice showing complete volvulus of the omentum between the colon and left inguinal ring (a) and a sagittal slice showing the greater omentum trapped in the left inguinal ring (b).
of the greater omentum with necrosis secondary to its being trapped in a left inguinal hernia. No triggering factor was found.

Given the absence of typical symptoms and its presenting as isolated acute abdominal pains, diagnosis is radiological. Ultrasound may show a non-compressible, discretely hyper-echoic ovoid mass in the painful area [8]. CT imaging can show the characteristic signs of a mass of fibrous tissue in a whirl around a vascular pedicle, or simply a whirl of fatty tissue.

Although cases of conservative treatment of primary torsion have been described in cases of partial volvulus, the treatment of complete torsion of the greater omentum with secondary necrosis is surgical [3]. This includes resection of the necrotic omentum. Aetiological treatment (tumour resection, treatment of a cyst, eventration or hernia) must be combined with this, as in our observation.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References