Royal Australasian College of Surgeons

Greater omental infarction

Greater omentum torsion is a rare condition.[1] It can be a diagnostic dilemma as it mimics other common pathologies such as appendicitis or diverticulitis. It is challenging to diagnose omental torsion based on clinical examination or biochemical markers alone.[2] The imaging modality of choice in diagnosing this rare condition is a CT scan.[3] Here we report a case of a patient presenting with secondary omental torsion herniating into the left inguinal canal.

A 36-year-old male with no significant medical history presented to the Emergency Department (ED) with 9 days of generalized non-specific abdominal pain. The patient denied having any systemic or constitutional symptoms. Physical examination demonstrated normal vital signs and mild generalized abdominal tenderness without signs of peritonism. In addition to this, he had a reducible non-tender left inguinal hernia. White cell count (WCC) was 13.2×10^9/L and C-reactive protein (CRP) 3.8 mg/L. A CT with IV contrast demonstrated omental torsion causing infarction with the inferior component of torted omentum visualized in the left inguinal canal. He was managed non-operatively as there were no signs of sepsis nor peritonism. His symptoms completely resolved and a full diet was re-instituted the following day. The patient was discharged from the hospital the next day and was reviewed in the outpatient clinic 2 weeks later. He was well and the decision was to repeat a CT in 3 months and electively operate on his left inguinal hernia. However, he represented to ED 2 days later with coryzal symptoms, diarrhea and worsening right-sided abdominal pain. He appeared to be unwell with a temperature of 39.6°C, a heart rate of 145 with a blood pressure of 98/70.

Blood results demonstrated WCC of 29.7×10^9/L and CRP 310 mg/L. CT scan showed worsening torsion with infarction of most of the greater omentum (Fig. 1). The patient was brought to the operating room for a laparoscopic-assisted omentectomy. A standard Hasson port entry with two further 5 mm ports were inserted under direct vision. Most of the omentum was infarcted secondary to omental volvulus (Fig. 2) with the edge of omentum herniating into the left inguinal canal. The omentum was transected with a LigaSure™ energy device (Fig. 3). Intraabdominal viscera was inspected; small bowel was mildly dilated with no obstructive point, and large bowel was normal without signs of ischemia. A decision was made to perform a hernia repair at a later date once the patient was well. Subsequent viral panel results returned with positive Adenovirus, for which the patient was managed

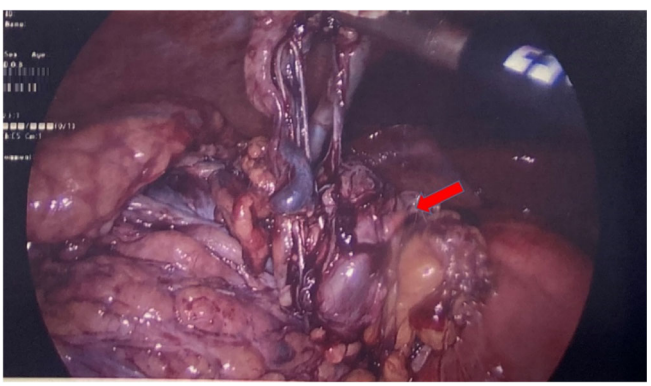

Fig. 2. Diagnostic laparoscopy showing omental twist at proximal section (red arrow) with evidence of infarction based on dusky appearance of greater omentum.

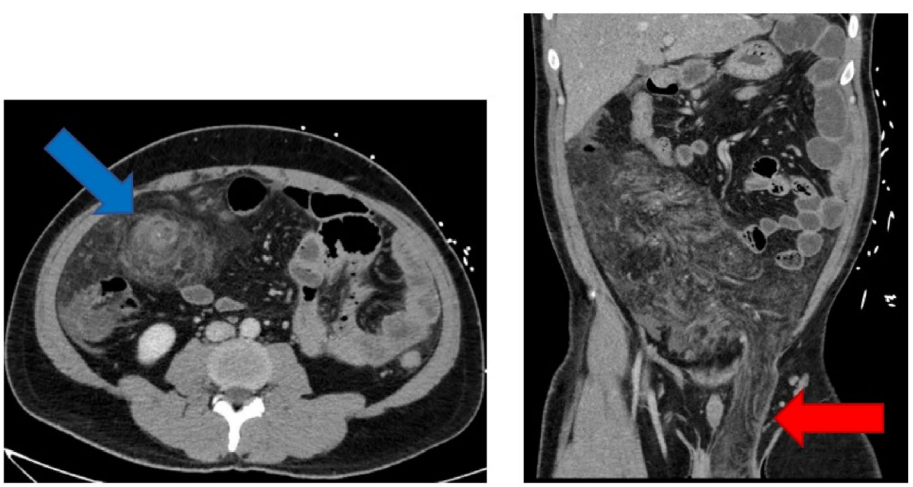

Fig. 1. Computed tomography performed on second admission. Classical 'whirl' pattern seen on axial plane (blue arrow) and coronal plane showing a left sided inguinal hernia protruding into the scrotum (red arrow).

Fig. 3. Omentectomy via midline incision exhibiting greater omentum winding on its own axis at a single point suggesting a unipolar rotation.

conservatively. After an uneventful recovery, he was discharged after 2 days.

Omental torsion was first described over 100 years ago by Eitel in 1899.[4] Omental infarctions are recognized on CT by the streaks of whirling and concentric pattern of soft tissue ('whirl' appearance) associated with fat dense lesions.[5] Omental torsion can be classified into primary and secondary torsion.[6] Primary torsions are idiopathic and are always unipolar, whereby the proximal segment of the greater omentum is fixed, and the remaining tissue is mobile. Secondary causes include tumours, cysts, intra-abdominal hernia or adhesions, and unipolar or bipolar in which both proximal and distal edges are fixed.[7] In our case, the patient had omental torsion arising from a left-sided inguinal hernia, making it a secondary omental torsion. A literature search in the PubMed database found only 14 published cases in the past 30 years, confirming that torsion from a secondary cause is very uncommon, although primary cause is rarer.[8] Invariably, there are two treatment options, conservative or surgical. Our patient presented with unique circumstances whereby clinical presentation did not correlate with the typical narrative of omental infarction. The decision to initially treat conservatively was based on clinical findings as pain was the chief complaint. However, as his clinical condition deteriorated on the second admission, the safest option was to undergo laparoscopic-assisted omentectomy. In select cases, a surgical approach is considered upfront as it is minimally invasive with quick recovery and suitable for patients where CT is highly discouraged, for example in the paediatric population.[9] In some cases, a conservative approach may be the safer option as it negates the risks associated with surgery, especially in high-risk patients such as pregnant women or elderly patients with significant comorbidities. Hence, we find that the choice of therapy for omental infarction must be based on the context of presentation although surgical intervention in this case was the most definitive treatment.

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