

Omental torsion, a rare acute abdominal syndrome: A case report

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Abstract

We aimed to present a case of omental torsion, a very rare cause of acute abdomen. The patient, presenting to the emergency clinic with fever, nausea, vomiting, and severe abdominal pain, underwent immediate surgery due to a suspicion of omental torsion based on the physical examination and computed tomography (CT) scan results. It was observed during the nighttime emergency laparotomy for this patient that the omentum was torsioned, interrupting the blood supply to the distal part. This disrupted area was excised using a sealer/divider device. Although rare, omental torsion should be considered in instances of acute abdomen.

Keywords: case report, omental torsion, abdominal pain

Introduction

The greater omentum is known to rotate around its long axis [1]. The tissue of the greater omentum may undergo primary torsion or become torsioned secondary to internal or external hernias, tumors, intra-abdominal cysts, and postoperative adhesions [2]. CT scans, as one of the radiological imaging methods, can assist in diagnosing these issues. Acute abdominal symptoms can be indicated by an elevated body temperature, leukocytosis, and an increase in C-reactive Protein (CRP) levels.

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Informed Consent

The authors stated that the written consent was obtained from the patient presented with images in the study.

Conflict of Interest

No conflict of interest was declared by the authors.

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Case presentation

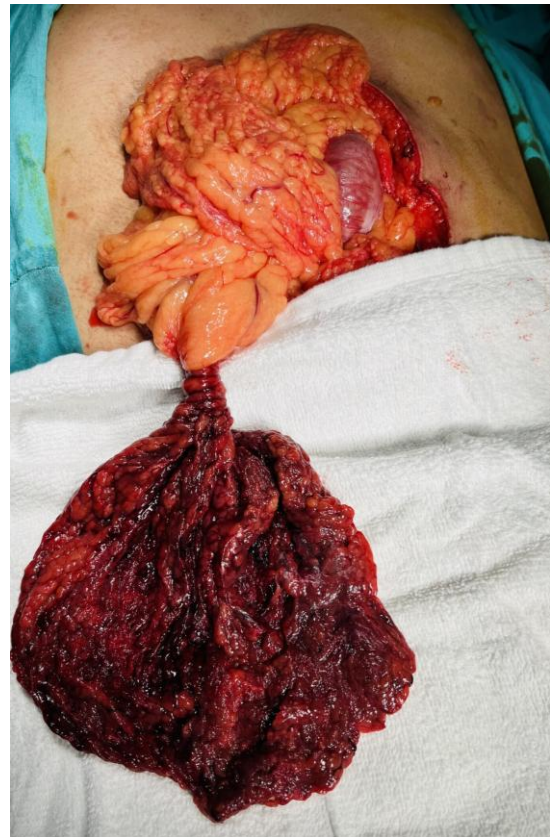
In this case, after receiving informed consent, we reported on a 24-year-old male patient who was admitted to our outpatient clinic with complaints of abdominal pain lasting 72 h. The patient sought help due to persistent abdominal pain, along with the onset of fever and vomiting in the last 24 h. Beyond these symptoms, the patient's medical history was unremarkable. A physical examination revealed sensitivity, defense, and rebound symptoms in the lower right quadrant. Laboratory results showed 17,000 / μ L leucocytes and 120 mg/L CRP, while other haemogram and biochemical values were within normal limits. CT imaging indicated omental rotation in the lower right quadrant of the abdominal region (Figure 1), incorrectly described as mesenteric volvulus in the CT report. There was no evidence of acute appendicitis. The laboratory results, taken with the physical exam findings and CT imaging, led to the decision to operate. The patient was hospitalized after consenting to surgery.

Figure 1: Omental rotation CT appearance formed by rotating along the long axle of the greater omentum tissue.



Operative findings revealed an edematous and necrotic omentum that had rotated along its longitudinal axis (Figure 2). The definitive diagnosis was made intra-operatively. No other intra-abdominal pathology was observed. Postoperatively, the patient received treatment as an inpatient. An enteral regimen was initiated 8 h post-operation. The patient was monitored for three days and, showing signs of recovery, was discharged on the third day. Pathological examination of the excised specimen showed "chronic active inflammation and congestion".

Figure 2: Appearance of omental torsion formed by rotating along the long axle of the greater omentum tissue during the operation.



Discussion

Embryologically, the major omentum tissue originates from the dorsal mesogastrium. It comprises four layers that extend between the transverse colon and the greater curvature of the stomach and continues to the front of the small intestines [3]. One end can move freely through the abdomen. According to the type of pathology, omental tissue can undergo primary torsion or torsion due to secondary causes. In the case of primary torsion, the distal tip of the omentum is free. This form of free rotation of the distal omentum tip is also known as unipolar torsion [4]. In one study involving 563 laparoscopic cases, the incidence of omental torsion was found to be a mere 1.1%, making it quite rare [5]. Anatomical variations in primary omentum torsion conditions that cause the omentum to move, such as increased trauma or peristalsis, are predisposing factors for torsion. Obesity also presents a risk factor [6]. Secondary omental torsion occurs as a result of an underlying intra-abdominal pathology, such as cyst adhesion or hernia. Secondary omental torsion is also referred to as bipolar torsion. In the case of secondary torsion, the distal tip is connected to the area causing torsion, depending on the underlying condition [4]. The patient's Body Mass Index (BMI) was measured at 24, which is within normal limits. Additionally, the patient history received was limited, with no mention of trauma. Any secondary causes were excluded according to radiological imaging and operative findings.

Preoperative Ultrasound (US) and CT imaging can assist in diagnosis, helping to ensure a correct diagnosis before surgery. US imaging reveals a focal area with increased echogenicity, making it a useful diagnostic tool for ruling out other acute abdominal conditions [7]. Torsioned omental tissue can be visible as a mass in US imaging [8]. CT imaging is beneficial in distinguishing perforation, diverticulitis, and gallbladder diseases

in acute abdominal cases, with a specific rotating view observable [9]. In our case, CT imaging aided in the differential diagnosis of an acute abdominal condition. US viewing was not the preferred method as it failed to provide objective data. The CT images were reported as mesenteric volvulus, complicating the diagnostic process. Secondary causes like acute appendicitis, acute cholecystitis, intra-abdominal abscess, and diverticulitis were ruled out.

Laparoscopy has become a standard method in managing acute abdominal disease. It is used as both a therapeutic and differential diagnostic tool in selected cases. Nevertheless, a high degree of expertise is necessary for laparoscopy usage in emergency surgical scenarios. Conditions like perforated cancer, fecal peritonitis, abdominal distension, and hemodynamic instability are relatively contraindicated for the laparoscopic method. In recent years, its use in acute abdominal cases has experienced increasing success [10]. In our case, according to the CT report, the definitive diagnosis could not be made. Furthermore, laparoscopy cannot be performed during night hours in our clinic. Given these reasons, differential diagnoses were ruled out by diagnostic laparotomy. Postoperative follow-ups showed a decline in leukocytosis and CRP values after omentectomy. This suggests that the omentectomy had a beneficial impact on the patient's health in this case.

Conclusion

Primary omental torsion is a rare condition, and other diagnoses should be excluded radiologically and during surgery, as acute conditions can mimic the abdominal symptoms in differential diagnoses. It is also important to remember that primary omental torsion alone can account for the cause of an acute surgical abdomen.

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