

# Primary omental torsion with successful conservative management, a case report.

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## Abstract

Primary omental torsion is a rare cause of acute abdomen with no definite consensus for the best management. We report a young male who was successfully managed using a conservative approach. Conservative management should be the first line of management. Laparoscopic resection is indicated after failure of conservative management.

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## Abstract

**Introduction:** Primary omental torsion represents one of the rare causes of acute abdomen. Its preoperative diagnosis is challenging owing to its unspecific symptoms and signs. There is no definite consensus for its best management approach. We present a case of primary omental torsion that was successfully managed non-operatively.

**Case Presentation:** A young male patient presented with recurrent attacks of abdominal pain in the right lower quadrant associated with nausea, and vomiting. He had rebound tenderness at the right iliac fossa and leukocytosis with elevated inflammatory markers. Computed tomography of the abdomen revealed a right-sided intraperitoneal mass of fat density suggestive of omental torsion. He was kept on conservative management and his abdominal pain gradually subsided. He was discharged home after seven days.

**Conclusion:** Primary omental torsion is a rare cause of acute abdomen especially in obese patients with inconsistent history, examination, and laboratory findings. Despite the controversy, the conservative approach, which depends on accurate radiological diagnosis, analgesia, prophylactic antibiotics and close follow up, should be attempted as a first line of management. Laparoscopic resection should be only considered after failure of conservative management.

**Keywords:** Omental torsion, acute abdomen, conservative management

## Introduction:

Differential diagnoses for the acute abdomen are diverse and primary omental torsion represents one of its rare causes.(1) Traditionally, it was merely intraoperative diagnosis as its preoperative diagnosis was challenging owing to its unspecific symptoms and signs. The preoperative diagnosis has been estimated to be established in less than 5% of all cases. However, the extensive use of different imaging modalities in surgical emergencies has increased the rate of accurate preoperative diagnosis of omental torsion.(2)

There is no definite consensus for the best management approach if the omental torsion is preoperatively diagnosed based on imaging studies.(3) Historically, surgical resection has been widely performed as it was usually diagnosed intraoperatively. However, a conservative non-operative approach can be beneficial in many cases when its diagnosis is confidently established.(3)

Herein, we present a young male patient who was preoperatively diagnosed as primary omental torsion based on the characteristic computed tomography (CT) findings and was successfully managed non-operatively. This work is reported in line with SCARE criteria.(4)

#### Case Presentation:

An 18-year-old male patient presented to the emergency department, for the second time within one week, with recurrent attacks of severe colicky abdominal pain that was associated with nausea, vomiting, and constipation. Initially at the first presentation, the pain was vague, all over the abdomen that was relieved by paracetamol without any imaging modalities. However, the pain started to progressively increase in the last 24 hours before the second presentation and became localized in the right lower quadrant. He had no other relevant symptoms and his past medical and surgical history was unremarkable.

Upon examination, he looked in pain and had tachycardia of 117 beats/m, low-grade fever of 37.8°, and a normal blood pressure. He was obese with body mass index of 31.6 Kg/m<sup>2</sup> (82 Kg, 1.61 m). His abdomen was tender at the right iliac fossa and supra-pubic with rebound tenderness at the right iliac fossa and audible normal peristalsis. The rest of the examination was unremarkable. His laboratory investigations were positive for leukocytosis (13.6 x 10<sup>6</sup>/μL) with neutrophilia (79.9%), elevated C-reactive protein (25.39 mg/dL) and elevated erythrocyte sedimentation rate (29). Other laboratory results including hemoglobin level, renal function, and liver function tests were unremarkable. He underwent CT of the abdomen with intravenous (IV) contrast which showed a right-sided intraperitoneal concentric-pattern mass of fat density with whirling appearance, extending from the umbilicus to the right iliac fossa that was suggestive of omental torsion (Figure 1).

Therefore, the patient was admitted for a trial of conservative management: Nil per os, IV fluids, analgesia, prophylactic IV antibiotics, and proton pump inhibitors. The antibiotics were ciprofloxacin and metronidazole to cover gram-negative and anaerobic bacteria. He was closely observed clinically and, fortunately, his abdominal pain subsided with non-steroidal anti-inflammatory drugs. He remained afebrile, with normal vital signs, and his abdominal tenderness gradually improved. Moreover, his leukocytic count, inflammatory markers (CRP, ESR) gradually returned to normal levels. Starting from the third day of admission, he resumed a clear liquid diet which was gradually escalated to a full diet. His condition showed a good improvement on the conservative management and he was discharged home, in a good condition, after seven days. Upon follow-up visit after one, three and six months, the patient had no symptoms and his clinical examination was unremarkable.

#### Discussion

Omental torsion, first described by Eitel in 1899, is a rare cause of acute abdomen with unknown etiology.(2) It affects males twice as frequently as females, usually between the fourth and fifth decade of life. It is more common in obese patients.(1) It usually presents with nonspecific symptoms and signs mimicking other abdominal pathologies, especially acute appendicitis. Thus, its diagnosis has been usually made intraoperatively with only 0.6-4.8% of cases being preoperatively diagnosed.(5) However, its preoperative diagnosis is more commonly established nowadays after the liberal use of computed tomography in the causalities. (3)

The omentum is a peritoneal fold hanging between the stomach and the transverse colon. It divides into right and left omentum. The right-sided omentum is longer, more mobile, and consequently, more common to be twisted along its blood supply causing omental torsion. Omental fat deposition occurs during childhood and is proportionally related to the overall fat.(1)

When the omentum twists around its long axis, it leads to venous obstruction with resultant edema and

arterial compromise leading to abdominal manifestations.(5) Omental torsion may lead to omental infarction; however, it is considered a different clinical entity.(6) Omental torsion is classified into primary and secondary. Primary omental torsion occurs without identifiable predisposing abnormalities, while secondary torsion occurred on top of an intra-abdominal pathology as hernias, omental cysts, tumors, or adhesions. Risk factors for omental torsion include obesity, trauma, anatomical variations, and a sudden increase in intra-abdominal pressure.(2)

Patients with omental torsion usually present with sudden localized abdominal pain aggravated by a sudden movement which may be associated with nausea and vomiting. On examination, there is right-sided tenderness with rebound tenderness. Temperature, total leukocytic count, and inflammatory markers may be slightly elevated or normal. Otherwise, laboratory findings are nonspecific that may delay the diagnosis and management. Its CT findings include a well-circumscribed fatty mass with dilated thrombosed veins.(1)

Due to its rarity, the treatment of choice remains controversial with no clear consensus or guidelines, especially with absence of prospective comparative studies.(1,3) Some authors have recommended surgical management with resection of the twisted omentum. Laparoscopic management is preferred rather than exploration laparotomy as it is associated with better visualization of the abdominal cavity, less postoperative pain, and wound-related complications. It provides clear precise diagnosis, excludes other differential diagnoses, speeds up the recovery by resecting the affected twisted omentum and eliminating the cause of abdominal pain, and thus, decreases the hospital stay and costs.(2) However, other experts have suggested the conservative management, including analgesia and prophylactic antibiotics, based on the natural history of the disease as a self-limited benign condition, hence, avoiding the operative complications. They argue that the recent advances and wide availability of CT allow reliable diagnosis, exclusion of other pathologies and, consequently, substitute the role of diagnostic laparoscopy. The administration of prophylactic antibiotics is justified to guard against hypothetic possibility of abscess formation.(7) And so, laparoscopic management is only reserved for cases of failed conservative management or cases with an unclear diagnosis.(1-3,7,8) .

In our case, the patient presented for the second time within one week with on-and-off right lower quadrant moderate abdominal pain. He was tachycardic with low-grade fever and his abdominal examination was suggestive of acute appendicitis. His laboratory findings showed slightly elevated leukocytosis and inflammatory markers. Our differential diagnosis at that point was acute appendicitis; however, the long duration (four days) of symptoms was not in line with his examination and laboratory findings. His CT scan confirmed the presence of omental torsion and excluded acute appendicitis and other pathologies. Therefore, we opted to start with a trial of a conservative approach with a low threshold to perform laparoscopic resection. We elected to administer wide-spectrum antibiotics to cover possible pathogens that may cause abscess. The close follow up, by serial examination and laboratory works, was crucial to early pick up any signs of sepsis. Fortunately, he responded well and promptly to the conservative management and was discharged within one week.

#### Conclusion:

Primary omental torsion is a rare cause of acute abdomen that should be considered in the differential diagnoses of acute abdomen in obese patients with inconsistent history, examination, and laboratory findings. The liberal use of CT represents a cornerstone for its preoperative diagnosis. Despite the controversy, the conservative approach, which depends on accurate radiological diagnosis, analgesia, prophylactic antibiotics and close follow up, is a valid judicious modality of management. It should be attempted as a first line of management even in young healthy patients. Laparoscopic resection should be only considered after failure of conservative management.

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## Legends

Contrast-enhanced computed tomography of the abdomen showing (white arrow) a right-sided intraperitoneal concentric-pattern mass of fat density with whirling appearance, extending from the umbilicus to the right iliac fossa that was suggestive of omental torsion.

