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# A rare cause of acute abdominal pain: Primary torsion of omentum majus

## Akut abdominal ağrının nadir bir nedeni: Omentum majusun primer torsiyonu

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*Primary torsion of the omentum majus is a rare cause of acute abdomen and it commonly mimics acute appendicitis. An eight year old boy was admitted to our clinic with symptoms and clinical findings of perforated appendicitis. The patient underwent emergency laparotomy at which a normal appendix and serosanguinous fluid in the peritoneal cavity were observed. The operative diagnosis was primary torsioned omentum. In the present study, preoperative and operative findings of primary omental torsion that differentiated it from acute appendicitis are discussed in the light of the literature.*

**Key words:** Primary omental torsion, childhood.

*Omentum majusun primer torsiyonu, akut abdomenin nadir bir nedenidir ve patoloji sıklıkla akut apandisiti taklit eder. Sekiz yaşındaki erkek bir çocuk, perfore apandisit semptom ve bulguları ile kliniğimize başvurdu. Olgu, acil olarak laparotomiye alındı. Eksplorasyonda appendiks normaldi ve peritoniyal kavite içinde sero-hemorajik sıvı vardı. Operatif tanı primer omental torsiyondu. Bu çalışmada, primer omental torsiyonu akut apandisitten ayıran preoperatif ve operatif bulgular, literatür ışığında tartışılmıştır.*

**Anahtar kelimeler:** Primer omental torsiyon, çocukluk çağı.

## INTRODUCTION

Primary torsion of the omentum is a rare condition and the clinical features may closely mimic acute appendicitis (1-3). The pathology is more commonly seen in boys than girls (4). Torsion of the greater omentum can be either primary, when no obvious cause is found, or more commonly secondary, when associated with intraabdominal pathology such as omental cyst, tumor, hernia or adhesion. The aim of this study was to discuss the differences in clinical and operative findings between acute appendicitis and primary omental torsion.

## CASE REPORT

An eight-year-old male was admitted to the Department of Pediatric Surgery of Celal Bayar University Hospital with a history of abdominal pain for five days. The pain was colicky and in the 24 hours preceding admission, had progressively worsened and become continuous. It was learnt that the patient had ridden an exercise bicycle for two hours, three hours before the pain had started. Nausea, vomiting, loss of appetite and fever were not present.

The child was overweight (body weight: 45 kg, length 141 cm, body mass index: 22.1, body mass index percentile: 99.9 %, weight correlated with length: 121%). Physical examination revealed tenderness in the right lower quadrant and periumbilical region of the abdomen and there was significant rebound tenderness. Bowel sounds were diminished. Rectal digital examination was evaluated as normal. Leukocyte count was 16.0 $10^3$ /mL, while urinalysis, plain abdominal radiography and ultrasonography were evaluated as normal.

After fluid resuscitation, the patient was taken to

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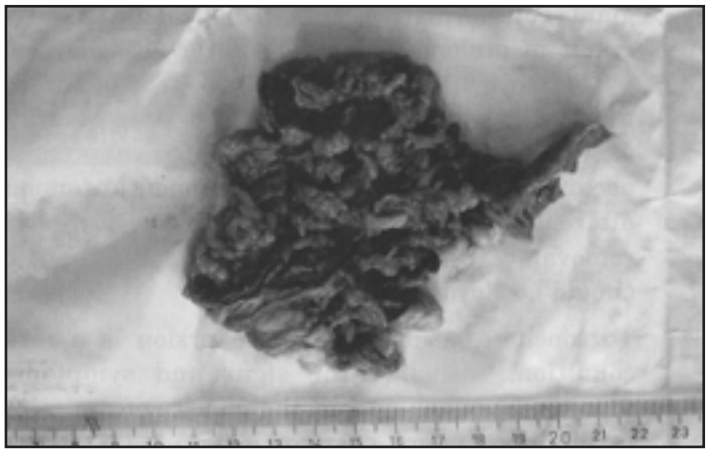

**Figure 1.**Macroscopic appearance of twisted omentum

the operating room with a preoperative diagnosis of perforated appendicitis and physical examination was repeated under general anesthesia. No mass was palpable. A laparotomy was performed through a small right lower quadrant muscle-splitting incision and 8 ml of serosanguinous fluid was found to be present within the peritoneal cavity. Initially, the appendix could not be found at the right lower quadrant. An indurate omental mass was delivered from the periumbilical region just above the incision and the omentum majus was found to be twisted 180° clockwise without any point of distal fixation. The omental mass was ischaemic, partially necrotic, edematous and hemorrhagic (Figure 1) and it was excised. The caecum was fixed and localized in the upper right quadrant. The case was incomplete fixation (malrotation type 3) as the ligamentum of Treitz was in its normal location. An appendix of normal appearance was found and removed. There was no Meckel's diverticulum or any evidence of further intra-abdominal pathology. No microorganism was cultured in the peritoneal fluid. The omentum was found to be infarcted, necrotic and with focal hemorrhage on histopathologic examination. Recovery was uneventful, with discharge on the third postoperative day.

## DISCUSSION

Primary omental torsion was first described by Eitel (5) in 1899 and is quite rare, with an incidence of 0.1 % in children undergoing laparotomy (6). Its etiology is obscure. There have been several suggested predisposing factors, including anatomic variations (accessory omentum, bifid omentum, tongue-like omental projections), redundant omental veins and obesity (2,7). Additionally, trauma, overeating, overexertion, sudden change in position, coughing and straining, and the presence of an inflammatory focus have been suggested to have a role in the etiopathogenesis (7). Most of the pediatric cases with omental torsion reported in the literature are from non-English literature such as Spain, Italy and Russia (8-10). This suggests that racial and regional factors may play a role in the etiopathogenesis. It was learnt that our patient had over exercised three hours prior to commencement of pain. Moreover, his body mass index was high and the weight correlated with length was above the highest average level.

The primary complaint in omental torsion is abdominal pain, which is usually sudden in onset. Location of the pain depends on the portion and size of the omentum undergoing rotation (2). In our case, the pain was located in both the right lower quadrant and in the periumbilical region. Physical examination revealed general tenderness. At laparotomy, it was observed that the omentum had formed a 5x6 mass.

Preoperative diagnosis of primary omental torsion is difficult. It is usually diagnosed during laparotomy as its clinical findings usually mimic acute appendicitis (1-3). However, paucity of gastrointestinal symptoms (nausea, vomiting) and the length of duration of symptoms, despite the presence of significant peritoneal findings, are different from typical acute appendicitis (1,2).

Ultrasound and computed tomography (CT) may help to identify the omental abnormality (3). Aoun et al (11) has reported a case of omental torsion which was preoperatively diagnosed by CT. In the present case, ultrasonographic findings were evaluated as normal.

Presence of a normal appendix at surgery should raise the suspicion of omental torsion when facing primary omental torsion, Oğuzkurt et al (2) considered the presence of sterile, serosanguinous fluid within the peritoneal cavity a universal finding. This was observed in our patient and the fluid culture was sterile.

The natural history of primary omental torsion is benign. Left untreated, the twisted omentum undergoes necrosis with progressive fibrosis and giant cell formation (12). This condition may result in prolonged ileus and fever (13) and the present authors therefore believe that management of primary omental torsion should be excision of the twisted omentum followed by appendectomy. Recurrence of primary omental torsion after surgery has not been reported and therefore removal of the pathologic portion of omentum should be curative

To conclude, primary omental torsion is a rare condition. Although the signs and symptoms mimic acute appendicitis, the paucity of gastrointestinal symptoms, poor correlation between the duration of history and physical findings and the presence of serosanguinous fluid in the peritoneal cavity should raise the suspicion of this condition.

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