Left-sided omental torsion: CT appearance

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Received: 9 March 2000
Revised: 22 May 2000
Accepted: 23 May 2000

Abstract A 34-year-old male presented with exquisite left flank pain. Computed tomography showed a hyperdense vascular structure surrounded by whirling linear streaks situated in the greater omentum under the splenic flexure of the colon. Omental stranding extended caudally into the pelvis where part of the inflamed omentum entered a left inguinal hernia sac. Surgery revealed left-sided torsion of the greater omentum. Left-sided omental torsion is infrequent and pre-operative diagnosis is rarely established. The CT findings of an omental fatty mass with a whirling pattern is characteristic of omental torsion. Preoperative diagnosis is important because conservative management has been suggested.

Key words Torsion · Greater omentum · CT diagnosis

Introduction

Omental torsion is a rare disease that affects the entire omentum or a segment of the greater omentum. It presents as acute abdominal pain mainly in the right lower quadrant or right flank. Left-sided omental torsion is infrequent [1] and it is rarely pre-operatively diagnosed [2, 3, 4]. We report a case of a surgically proved left-sided torsion of the greater omentum presenting with diffuse abdominal pain, tenderness of the left flank, and specific CT findings. Although the classical treatment is surgery, knowledge of the CT findings of omental torsion is important because conservative management has been suggested [5].

Case report

A 34-year-old male presented with increasing diffuse abdominal pain lasting 3 days. On admission, he was febrile, had diffuse abdominal tenderness, and had exquisite left flank pain upon palpation. A left inguinal hernia was noted. The white blood count was elevated at 14,000/mm³ with 85% neutrophils. He had no known precipitating factor or relevant past medical history. Diverticulitis was suspected and a CT scan was requested.

The CT showed a hyperdense vascular structure running perpendicular to the axial plane, surrounded by whirling linear streaks, situated in the greater omentum, below the splenic flexure of the colon (Fig. 1). Omental stranding extended caudally in left flank and into the pelvis where part of the inflamed omentum entered a left inguinal hernia sac. The wall of the colon was not thickened and adjacent small bowel was slightly dilated and medi- ally displaced.

Surgery revealed left-sided torsion of the greater omentum. Total omentectomy was performed. Pathology showed diffuse ischemic changes of the resected omentum with hemorrhagic infarction of a 7-cm segment.
Fig. 1  a  A CT scan after intravenous injection, 1 cm above the aortic bifurcation, shows an omental vessel with stranding of the surrounding fat in the left flank.  b Three centimeters below, a whirling pattern is seen around the vertically oriented vessel, in the greater omentum.  c At the pelvic level, the greater omentum shows diffuse stranding and occupies the whole pelvic cavity. The anterior and left part of the omentum is seen entering the left inguinal hernia.  d Two centimeters below, a left inguinal hernia containing omental fat is well demonstrated.

Discussion

Torsion of the omentum is a rare disease that may affect all age groups including children above the age of 4 years [6]. Primary torsion is supposed to be related to local omental anomalies such as bulky, bifid or accessory omentum, or to abnormally redundant omental veins. Secondary torsion, which is more frequent, is associated with adhesions to cysts, tumors, inflammatory foci, scars, or hernias. Precipitating factors for primary or secondary torsion are the same: sudden increase in intra-abdominal pressure following heavy meals; heavy exertion; change in body position; coughing or sneezing; and possibly use of occupational vibrating tools [7]. In our patient a left inguinal hernia was present.

Torsion leads to omental infarction and usually presents as an acute abdomen; however, in many cases, omental infarction may be present without sign of torsion at surgery. This may be due to transient torsion or to other mechanisms leading to venous thrombosis such as kinking or stretching of the draining veins. The great majority of cases of omental torsion reported in the literature describe torsion involving the right side of the omentum with right lower quadrant or right para-umbilical pain, clinically mimicking acute appendicitis, acute cholecystitis, cecal diverticulitis, or appendicitis. Left-sided omental torsion as in our patient is unusual but has been occasionally described [1, 2].

Until recently, pre-operative diagnosis was extremely rare but should become more frequent with the increasing use of CT in the diagnosis of acute abdominal conditions and awareness of specific imaging manifestations of omental diseases [2, 3, 4]. Differentiating omental torsion from appendicitis and acute cholecysti-