Omental Torsion: A rare cause of acute abdomen

Idil Gunes Tatar*, Kerim Bora Yilmaz, Onur Ergun, Ozdemir Meric Tuzun, Baki Hekimoglu

Department of Radiology, Diskapi Yildirim Beyazit Training and Research Hospital, Ankara, Turkey
*Corresponding Author: Diskapi Egitim Arastirma Hastanesi Radyoloji Klinigi, Irfan Bastug Caddesi, 06610, Ankara/TURKEY
Tel: +903125962000 Fax: +903123186690
e-mail: idittr@yahoo.com

Key words: Omental torsion; computed tomography; whirl sign; mushroom sign

Received: 19.08.2013 Accepted: 23.09.2013 e-published: 25.09.2013

Abstract

Omental torsion is a rare cause of acute surgical abdomen. It is caused by twisting of omentum along its long axis ending up in vascular compromise. In computed tomography presence of concentric streaks in the omental fat which is termed as ‘whirl sign’ is characteristic for torsion, although it can not be visualised if the rotation axis is not perpendicular to the examination plane. We present the tomography findings of a 71 year-old male patient with surgically correlated omental torsion in the right lower quadrant hernia sac. With this case we define ‘mushroom sign’ to describe the omental torsion with internal hyperdense streaks around the vascular pedicle in the hernia sac.

Introduction

Omental torsion is an infrequent cause of acute surgical abdomen. It is caused by twisting of omentum along its long axis ending up in vascular compromise. In this case we present the tomography findings of a 71 year-old male patient with surgically correlated omental torsion in the right lower quadrant hernia sac.

Case Report

A 71 year-old male patient was admitted to the emergency department with abdominal pain, nausea and vomiting. The patient described his pain as gradually increasing with sudden onset and short duration. Abdominal ultrasonographic examination demonstrated a hyperechoic lesion associated to the abdominal wall located in the right lower quadrant. Findings were interpreted as subcutaneous omental herniation. The hyperechogenity in the hernia sac prompted the consideration of omental infarction. An abdominopelvic computed tomography (CT) was carried out. CT revealed a right lower quadrant mass of herniated omentum with hyperdense streaks without any bowel loops in the hernia sac (Figure 1). The narrow neck of the hernia sac and the fat stranding suggested the possibility of incarceration. There were no bowel contents in the hernia sac or a sign of intestinal obstruction. The radiologic diagnosis was right-sided omental herniation and omental torsion in the hernia sac. Omentectomy verified infarction of the greater omentum in the hernia sac as well as manifesting a focal mass of omental torsion. Histopathologic examination displayed areas of haemorrhage and infarction in the omentum.

Discussion

Omentum is a two-layered peritoneal extension connecting the stomach to adjacent organs. In the differential diagnosis of fatty masses of the omentum, omental torsion, fat necrosis, panniculitis, mesenteric lipodystrophies and fat containing neoplasms such lipoma, liposarcoma, teratoma, angiolipoma should be considered.

The etiology of omental torsion is not well known. The idiopathic or primary type is less frequent with no underlying pathology. It is seen in patients with anatomical omental variations such as bifid omentum or accessory omentum. Secondary type which is more common is associated with internal or external hernia, inflammatory processes, intraabdominal tumors or adhesions. In the latter type a distal fixation point is present (1,2). Regardless of the cause the twisting of the omentum ends up in vascular compromise and eventually infarction. Some cases of omental infarction is not associated with...
torsion, termed as primary idiopathic segmental infarction (3).

The majority of cases have been reported to have right-sided torsion (4,5). Various CT findings can be detected including focal, hazy hyperdensities or a masslike lesion that can resemble pathologic infiltration (6). Computed tomography findings are usually related with the alteration of the relationship between superior mesenteric artery and vein. Presence of concentric linear stripes in the heterogeneous fat density around the vascular pedicule is known as ‘whirl sign’. It is consistent with torsioned vascular pedicle and has been described to be characteristic for omental torsion (1,7,8). In some omental torsion cases whirl sign might not be detected if the axis of rotation is not perpendicular to the transverse examination plane such as in our case. Yet it has been shown that whirl sign might be related with other conditions like twisting and rotation of mesentery in patients with adhesions (9). With this case we define ‘mushroom sign’ to describe the omental torsion with internal hyperattenuating streaks around the vascular pedicule in the hernia sac which can aid the diagnosis of omental torsion in a hernia sac.

Complications of omental torsion include omental necrosis, peritonitis, bowel obstruction, adhesion formation and sepsis which makes its early diagnosis critical (10,11).

Acknowledgements

None

Conflicts of Interest

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

References
