
Primary Greater Omental Torsion: CT Diagnosis in an Elderly Woman

Eli Atar MD¹, Pearl Herskovitz MD¹, Eldad Powsner MD² and Miriam Katz MD¹

Departments of ¹Diagnostic Radiology and ²Surgery, Rabin Medical Center (Golda-Hasharon Campus), Petah Tiqva, Israel
Affiliated to Sackler Faculty of Medicine, Tel Aviv University, Ramat Aviv, Israel

Key words: omentum, torsion, computerized tomography

IMAJ 2004;6:57-58

Torsion of the greater omentum is a rare cause of acute abdomen. The diagnosis is seldom considered in the differential diagnosis based on clinical grounds and physical examination and is usually estab-

lished at surgery. With computerized tomography one can identify the cause of acute abdomen, including those that are uncommon.

We present a rare case of primary

greater omental torsion that occurred in an elderly woman; it was located in the right upper quadrant and was diagnosed preoperatively with CT examination.

Patient Description

A 64 year old woman presented to the Emergency Room with symptoms of acute abdominal pain and vomiting that had begun several hours prior to her admission. She complained of similar abdominal pains, but on a lower scale, that had subsided after a bowel enema. Her past medical history was uneventful and she had no previous abdominal surgery.

On physical examination the patient was in apparent distress. Her pains were located in the right upper quadrant and were aggravated by coughing. The abdomen was distended with diastasis recti. A 7 cm mass sensitive to movement was felt in the right upper quadrant with local peritoneal signs and a positive Rovsing sign. The white blood cell count was 12,000 cells/m³; the rest of her blood count and her serum biochemistry were normal. Abdominal X-ray showed a non-specific bowel gas pattern and the patient was sent for an emergency abdominal CT scan.

The abdominal CT examination without oral or intravenous contrast due to allergy to iodine revealed a mass of infiltrated fatty density in the right upper quadrant anterior to the liver, in contact with the abdominal wall. No recognizable pattern of infiltration or blood vessels was demonstrated in the lesion [Figure]. No other pathologic lesions were demonstrated. The CT finding was interpreted as omental torsion.

At laparotomy, a 360 degree torsion of the greater omentum was confirmed and omental resection was performed. The patient recovered uneventfully and was discharged home. The pathologic specimen of the resected omentum measured 12x8x3



Unenhanced CT scan through upper abdomen demonstrating a mixed fatty density, between the liver and the anterior abdominal wall, with curved linear densities (arrow).

cm in size with fat necrosis and diffuse hemorrhage caused by the torsion.

Comment

The greater omentum is a two-layered fold of peritoneum between the greater curvature of the stomach and the transverse colon. Since it has no attachments except on its superior aspect, it is very mobile. Torsion of the greater omentum is caused by partial or total rotation around its main axis, causing compromised perfusion of the omentum and infarction. Torsion and infarction of the omentum was first described over 100 years ago. Omental torsion or volvulus may be primary or secondary. The etiology of primary torsion is unknown, but several causative factors have been identified in conjunction with this condition, such as congenital abnormal attachment of the free edge or a bifid, bulky or accessory omentum [1,2]. Some predisposing factors such as obesity, trauma and strenuous activity were also found to coexist with this entity [1]. Secondary omental torsion is due to an acquired attachment following hernia repair, a surgical scar, tumors or perforated bowel [2].

The clinical symptoms of omental torsion are of acute abdomen and are due to ischemia and infarction. It can mimic other acute abdominal states such as appendicitis, cholecystitis, torsion of appendix epiploica or diverticulitis. The diagnosis based on clinical signs and physical examination alone is difficult and, in most of the reported cases (in the English literature), is established at explorative laparotomy.

The use of CT examination in the evaluation of the acute abdomen has improved the accuracy of the preoperative differential diagnosis. To the best of our knowledge only a few cases of primary (surgically proved) omental torsion in adults have been reported in the English-language medical literature. The male/female ratio was 5:3 and the age range 20–51 years. There are also reports of diagnosis of this entity by ultrasound and magnetic resonance imaging [3–5]. The location was usually in the right lower quadrant, but a few reports found omental volvulus in the left abdomen, the pelvis or the foramen of Morgagni [4]

Classical signs of omental torsion on CT

scan are of a hazy fatty mass with concentric linear strands in the greater omentum, as described by Ceuterick et al. [3]. These strands are twisted blood vessels whirling around a central rod [4]. This entity occurs mainly in children and young patients [1,2]. However, there are other differential diagnoses of hazy fatty mass with associating stranding, such as omental hernia, epiploic appendicitis, paniculitis and fat-containing neoplasms.

Our patient was an elderly woman (the oldest ever reported) in whom the lesion was found in an unusual location – the right upper quadrant. The CT appearance of an infiltrated fatty mass without any recognizable pattern made the differential diagnosis – between omental torsion and other entities such as lipodystrophy or liposarcoma, diverticulitis or a localized hematoma – more difficult.

In conclusion, with the increasing use of CT in the diagnostic process of acute abdomen, it is important to also seek the rare causes of acute abdomen such as omental torsion. The CT signs of omental torsion, even if not completely pathognomonic, should be suspected also in elderly patients even if the lesion is located in an unusual site as presented here.

References

1. Chew DK, Holgersen LO, Friedman D. Primary omental torsion in children. *J Pediatr Surg* 1995;30(6):816–17.
2. Cervellione RM, Camoglio FS, Bianchi S, et al. Secondary omental torsion in children: report of two cases and review of the literature. *Pediatr Surg Int* 200;18(2):184–6.
3. Ceuterick I, Baert AL, Marchal G, et al. CT diagnosis of primary torsion of greater omentum. *J Comput Assist Tomogr* 1987;11:1083–4.
4. Maeda T, Mori H, Cuyjo M, et al. CT and MR findings of greater omentum: a case report. *Abdom Imaging* 1997;22:45–6.
5. Stella DL, Schelleman TG. Segmental infarction of the omentum secondary to torsion: ultrasound and computed tomography diagnosis. *Australasian Radiol* 2000;44:212–15.

Correspondence: Dr. E. Atar, Dept. of Diagnostic Radiology, Rabin Medical Center (Golda-Hasharon Campus), Petah Tiqva 49372, Israel.

Phone: (972-3) 937-2215

Fax: (972-3) 937-2630

email: atareli@hotmail.com