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## Right hypochondrial dilemma: A case report of omental infarction in elderly

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### Abstract

Omental infarction is a rare cause of acute or subacute abdominal pain that is reported in surgical and radiological literature. A 65-year-old man presented with complaints of pain on the right side of upper abdomen for 3 days. Tenderness elicited over the right hypochondrium and a positive Murphy's sign. Contrast enhanced computed tomography (CECT) scan showed a focal dense fatty lesion with hyperdense peripheral halo and surrounding mesenteric fat stranding adjacent to transverse colon in the right upper quadrant. He underwent diagnostic laparoscopy. A part of the greater omentum was found adherent to the anterior abdominal wall over the left lobe of the liver which was infarcted and was removed. Omental infarction is a rare entity and it may be considered as a differential diagnosis in acute abdominal pain once all the other common causes have been ruled out.

**Keywords:** Omental infarction, elderly, right hypochondrial pain

### Introduction

Omental infarction is an acute vascular disorder which compromises the blood supply to the tissues of the greater omentum [1]. It is a rare cause of acute or subacute abdominal pain with a reported incidence of approximately 0.3% and is found in 0.1% of laparotomies for acute abdominal pain [2]. This is due to large number of vascular collaterals to the greater omentum from the epiploic arteries. Nowadays, it is increasingly being reported in general surgery and radiological literatures, on account of advancing imaging techniques and improved recognition of its radiographic presentation [3]. Omental infarction is more common in males than in females (2:1) and is more common within the age group of 40-50 years [1, 3].

Right sided omentum is most commonly involved [4]. This could potentially be due to the greater length of the right omentum, increased mobility, altered vasculature and fatty accumulation in omentum impeding the distal right epiploic artery [5].

In pediatric age group, though the incidence is lesser, it can be misdiagnosed as acute appendicitis, typically presenting with sudden onset of right-side abdominal pain and tenderness and hence unable to distinguish clinically. Since CT is being used more frequently in the investigation of children with acute abdominal pain, knowledge of the characteristic imaging feature is important for making proper diagnosis and differentiating it from acute appendicitis [5, 6].

In the postpartum period, omental infarction can occur as a result of hematological changes in pregnancy (hypercoagulable state) and the distortion of omentum by gravid uterus leading to increased risk of thromboembolic events. Another cause may be the possible changes during the return of the mother's body to pre-pregnant physiological condition which may provoke infection [7].

Here, we describe a case of omental infarction mimicking acute cholecystitis. The incidence, pathogenesis and management of this rare condition is highlighted in this article.

### Case Report

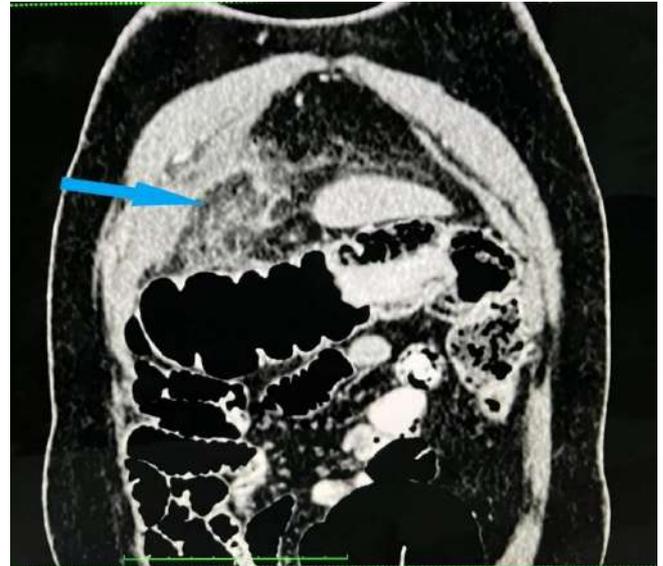
A 65-year-old man with BMI 30, presented with complaints of pain on the right side of upper abdomen for 3 days. The pain was sudden in onset, severe, continuous and confined to the right side of upper abdomen. It aggravated on leaning forward and laying down. He also complained of constipation for 2 days and decreased appetite. He was on regular medications for systemic hypertension (amlodipine and losartan). He had a past history of a road traffic accident for which he had undergone craniotomy five years back. He was also diagnosed to have hemorrhoids. He was not an alcoholic or a smoker.

On examination, he was afebrile with heart rate of 90bpm and blood pressure of 140/82 mmHg. He was hemodynamically stable. His abdomen was soft with tenderness elicited over the right hypochondrium and elicited a positive Murphy's sign. Guarding was present on palpation. Blood and biochemical analyses were normal.

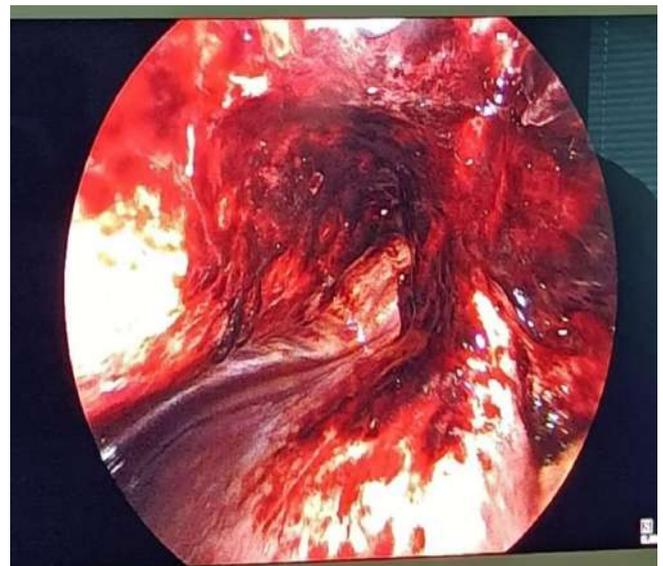
A provisional diagnosis of acute cholecystitis was made and the patient was advised to get admitted for further management. He was started on IV fluids, diclofenac and cyclopam for pain and IV cefotaxim anticipating cholecystitis. He was then taken for further imaging. USG abdomen and pelvis revealed a normal gallbladder without any calculi and ill-defined region of fat strand over the liver. Later a contrast enhanced computed tomography (CECT) scan was advised. This revealed a focal dense fatty lesion with hyperdense peripheral halo and surrounding mesenteric fat stranding adjacent to transverse colon in the right upper quadrant next to the anterior surface of liver with normal adjacent transverse colon. (Image 1, Image 2)

A presumptive diagnosis of omental infarction or the epiploic appendages was made and he was advised to undergo surgery. He underwent diagnostic laparoscopy 2 days after admission. Intraoperatively, the greater omentum was visualized and a segment was found adherent to the anterior abdominal wall over the left lobe of the liver at the junction of the medial most part of the right diaphragm and the anterior abdominal wall. This segment was found to be infarcted. (Image 3, Image 4) The gallbladder was found to be normal with no surrounding inflammation. The transverse colon was also visualized and it did not reveal any signs of inflammation.

The infarcted segments were dissected off from the abdominal wall, liver and undersurface of diaphragm and was excised and removed with an Endo Bag through the umbilical port and sent for histopathological analysis. The rest of the abdomen was visualized and found to be normal. He had an uneventful postoperative period and made a complete recovery. He was discharged 2 days after the procedure and had complete resolution of his presenting symptoms.



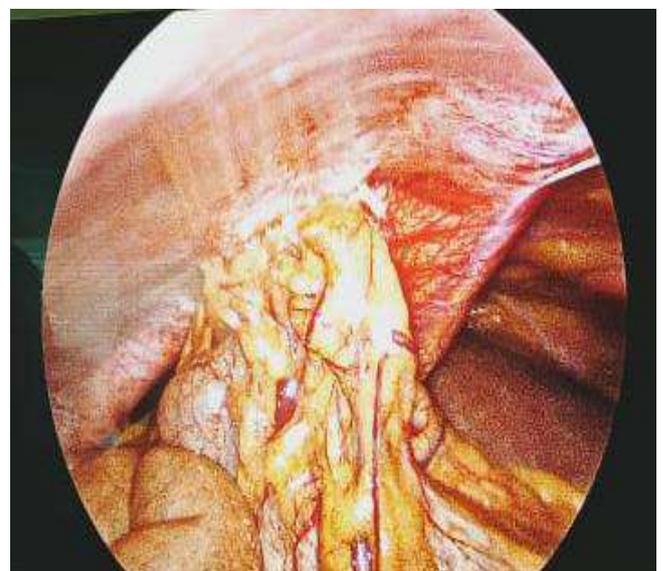
**Image 2:** Coronal view of CECT Abdomen showing the fat stranding focus above the liver



**Image 3:** Intraoperative view showing infarction sites of omentum



**Image 1:** Axial view of CECT Abdomen showing the classical finding of fat stranding seen in case of omental infarction



**Image 4:** Intraoperative view showing the omentum adherent to anterior abdominal wall

## Discussion

The greater omentum is composed of a double layer of peritoneum that extends inferiorly from the greater curvature of the stomach, turns superiorly on itself to drape over the transverse colon, and extends to the retroperitoneal pancreas.

Omental infarction can be classified into two categories: primary and secondary as described in the landmark paper by Leitner, *et al.* Primary omental infarction may be due to anatomical variants (bifid omentum) [3], bulky omentum, overeating, local trauma, cough, use of laxatives, violent exercise and obesity [6]. Secondary omental infarction may be secondary to other pathologies such as omental torsion caused by tumors, cysts or adhesions; diverticulitis, congestive heart failure, vasculitis, hypercoagulability and polycythemia or post surgeries [4].

Omental infarction is a rare entity that can cause acute or subacute abdominal pain and is known to mimic other common conditions causing acute abdominal pain, such as appendicitis or cholecystitis [6]. The most typical presentation is right lower abdominal pain, vomiting, low grade fever, occasionally with a palpable abdominal mass [4, 7]. Only 5% of all cases of omental infarction are diagnosed non-operatively [2].

The investigations useful in diagnosing omental infarction are CT and ultrasound. Ultrasound is specific but not sensitive for omental infarction [6]. At CT scan, the most common finding is an ill-defined fat density with surrounding inflammatory changes and in case of omental torsion [4], “whirl” sign can be noted. This is due to the whirling of omental vessels due to torsion which are visible as streaks on CT [7].

Omental infarction can be treated conservatively using analgesics along with anti-inflammatory drugs, but rare complications like intestinal obstruction, adhesions, abscess formation may occur which will require surgical intervention. The best modality is diagnostic laparoscopy followed by resection of the infarcted omental segments either laparoscopically or, if needed, through laparotomy [8]. The choice of management remains controversial and should be individualized depending on patient pain severity, diagnosis certainty and response to initial conservative methods [9].

## Conclusion

Omental infarction is a rare entity and it may be considered as a differential diagnosis in acute abdominal pain once all the other common causes have been ruled out.

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