# Case Series

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# Primary omental infarction: a report of a series of cases in an Indian tertiary care hospital

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### **ABSTRACT**

Primary omental infarction is a relatively rare and often presents as right sided abdominal pain. It is often diagnosed as appendicitis and is usually picked up intra-operatively, or - as often seen nowadays - on imaging. We describe a series of four cases of primary omental infarction that presented to us with varying clinical features. Three of them had a short history of right sided abdominal pain, whereas the fourth patient had a longer history of left sided abdominal pain. All 4 were managed operatively, with the fourth having presented with an intra-abdominal abscess that required laparotomy. Primary omental infarction is a diagnosis which must be considered in any case of acute abdomen. Cases diagnosed with certainty on imaging may be managed conservatively but must be followed up closely. Need for surgical intervention should be considered in select cases.

Keywords: Abdominal pain, Abscess, Adult, Computed tomography, Infarction, Omentum, Omental infarction

# INTRODUCTION

The greater omentum is a multi-layered fold of vascularised fibro-fatty tissue, attached superiorly to the greater curvature of the stomach and to the transverse colon with a free inferior edge. Primary omental infarction (POI) is a rare entity. We describe four cases of POI treated by us.

# **CASE SERIES**

# Case 1

A 34-year-old male presented with 2 days history of non-radiating, non-colicky, right sided abdominal pain, worsened with movement, and without nausea, vomiting, alteration of bowel habits or fever. Pulse and BP were normal. Abdominal examination revealed right hypochondrial and lumbar guarding and rebound tenderness.

WBC count was 17,400 per µl with 74% neutrophils. Amylase and lipase levels were normal.



Figure 1: CECT image from case 1 showing infarcted omentum.

A contrast enhanced CT scan (CECT) of the abdomen showed ill-defined fat-stranding involving the omentum along the right hypochondrium and lumbar regions.

A diagnostic laparoscopy revealed the right side of the omentum to be infarcted. A partial omentectomy was carried out. His post-operative period was uneventful. Histopathology showed fibroadipose tissue with areas of congestion.

#### Case 2

A 26-year-old male presented with 2 days history of non-migrating right lower abdominal pain with nausea and anorexia. He had undergone mitral valve repair for rheumatic heart disease. His vitals were normal. Abdominal examination revealed tenderness in the right iliac fossa and lumbar region. Total count was 11,570 per µl with 60% neutrophils. CECT of the abdomen revealed a fairly well-defined area with fat stranding in the right lower abdomen within the omentum, located anterior to the ascending colon and caecum.

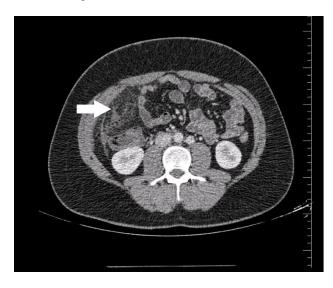


Figure 2: CECT image from case 2 showing infarcted omentum.

Diagnostic laparoscopy revealed an infarcted omentum which was adherent to adjacent small bowel loops and appendix. He underwent a partial omentectomy with appendicectomy. Postoperative period was uneventful. Histopathology showed an inflamed appendix and omentum with focal necrosis and fibrinous exudate.

#### Case 3

A 60 year old lady presented with 15 days history of intermittent, dull aching upper abdominal pain and non-bilious vomiting. Her vitals were normal. Examination

revealed tenderness and guarding over the entire left side of the abdomen. A CECT abdomen showed hyperdense, communicating, loculated collections adjacent to small bowel loops in the left lower quadrant with diffuse omental fat stranding and an ill-defined lesion in left lower abdomen/ focal infarction. Exploratory laparotomy showed an infarct involving most of the greater omentum, with an abscess between the omentum and small bowel loops that it was adherent to. Malrotation was noted with caecum being mobile and lying to the left of the midline. Abscess drainage with omentectomy and appendicectomy were done. She was discharged had an uneventful post-op period. Histopathology showed omentum with areas of necrosis and fibrosis. Appendix showed lymphoid hyperplasia

#### Case 4

A 22-year-old gentleman presented with 4 days history of non-radiating, non-colicky right sided abdominal pain. His vitals were normal. Abdominal examination revealed tenderness in the right hypochondrial and lumbar regions. Total count was 14,700 per  $\mu l$  with 78% neutrophils.

CECT abdomen revealed a focal area of fat stranding in the right hypochondrium and lumbar regions, anterior to the ascending colon- suggestive of omental infarction.



Figure 3: CECT image from case 4 showing infarcted omentum.

At diagnostic laparoscopy, the right half of omentum was found to be infarcted. Adjacent bowel was healthy. A partial omentectomy was carried out. Post-operative recovery was uneventful. Histopathological examination showed focal fat necrosis with evidence of fibrinoid necrosis of blood vessels.

The four cases are summarized in Table 1.

Table 1: Summary of the four cases.

Cases	Onset (days)	Pain	Fever	Nausea/ vomiting	Tenderness	Peritonism	Total leucocyte count	Neutro- philia
Case 1	2	$RUQ^{\dagger}$	No	No	Yes	Yes	Elevated	Yes
Case 2	2	RLQ <sup>‡</sup>	No	Yes	Yes	No	Elevated	No
Case 3	15	Epigastrium, LUQ§	No	Yes	Yes	Yes	Elevated	Yes
Case 4	4	RUQ, RLQ	No	No	Yes	No	Elevated	Yes

<sup>†</sup>RUQ: right upper quadrant; ‡ RLQ: right lower quadrant; § LUQ: left upper quadrant

#### **DISCUSSION**

Omental infarction is a relatively rare clinical entity with under 500 cases described in literature.1 Most occur in adults with a male:female ratio of approximately 2:1. The right side of the omentum is more frequently involved. This has been attributed to a longer length on that side; as well as a more tenuous blood supply.<sup>2</sup> One of our patients showed a left sided infarct- a feature that has been described relatively rarely.<sup>3</sup> Omental infarction was described by Leitner in 1952.4 He classified the condition into primary or secondary based on the antecedent cause, or lack thereof. Both types were further subdivided according to whether torsion was present or not. Secondary omental infarction is usually due to prior abdominal surgery, trauma, hernias, or inflammation elsewhere. In the absence of torsion, the term 'idiopathic segmental infarction of the greater omentum' (ISIGO) has been used. Hypercoagulable states and vasculitides are predisposing factors for this condition. Long distance running has been described as a precipitating factor and is attributed to splanchnic vasoconstriction during exercise.<sup>2</sup>

Patients often present with right lower quadrant pain, fever and leukocytosis. Vomiting or nausea alone, may be present. Bowel disturbances such as diarrhoea or constipation have also been described.<sup>4</sup> Abdominal examination may reveal tenderness localised to a particular quadrant. Signs of local peritonism may be absent.

Historically, a diagnosis of omental infarction was made during surgery for suspected appendicitis. However, with CT scanning being employed more frequently in the workup of abdominal pain, cases of omental infarction are increasingly being diagnosed by imaging alone. Sonological features suggestive of omental infarction are a hyperechoic mass in the anterior abdomen.<sup>5</sup> On computed tomography, infarcted omentum shows a mixed attenuation.6 While most cases respond to a conservative line of management with analgesia and antiinflammatory drugs, some would require operative intervention. Necrosectomy offers a shorter time to recovery.7 Itenberg et al argue that, if a diagnosis can be confidently obtained on imaging with clinical correlation, conservative management must be attempted. However diagnostic laparoscopy must be undertaken with failure of symptoms to resolve or if a diagnosis is doubtful.8

Laparoscopic excision of necrotic omentum is the currently accepted operative modality.

In patients who are initially diagnosed with POI and managed conservatively, Abscess formation as a delayed presentation is a relatively rare entity and was seen in one of the patients described in our series. 9,10 Abscesses forming in infarcted omentum may be drained either percutaneously or surgically. 2

#### **CONCLUSION**

For primary omental infarction, we recommend an attempt at conservative management after discussing options with the patient. Patients managed conservatively may benefit from repeat imaging on follow up, to look for abscess formation. We recommend a low threshold for surgical intervention in case of non-improvement of symptoms, or if features of peritonitis are present.

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