

IDIOPATHIC SEGMENTAL INFARCTION OF GREATER OMENTUM (ISIGO) A RARE CAUSE OF ACUTE ABDOMEN

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ABSTRACT

A 52-year-old man presented to the emergency department with severe right-sided abdominal pain. Murphy's sign was elicited. A presumptive diagnosis of acute cholecystitis was made. Ultrasound of the abdomen revealed normal appearance of gallbladder. CECT scan of his abdomen and pelvis demonstrated focal, non enhancing, mass like mesenteric fat stranding & thickening of greater omentum in right perihepatic region. The patient was diagnosed with idiopathic segmental infarction of greater omentum. (ISIGO) is a rare cause of right-sided abdominal pain, mimicking acute surgical pathologies. CT features can be diagnostic, but due to its rarity the diagnosis is often missed. We present a case of ISIGO and discuss the utility of CT scan & role of conservative management of ISIGO. The literature about the incidence, pathogenesis, and management of omental infarction is reviewed and presented to the reader.

Keywords: Acute cholecystitis, Idiopathic segmental infarction of greater omentum .ISIGO, acute abdomen

Introduction

Acute abdominal pain accounts for 7-8 % of all emergency department visits and yet the evaluation of this common presentation remains complex & broad based.¹ Omental infarction can mimic the classic presentation of an acute abdomen.

Idiopathic segmental infarction of greater omentum was first reported in 1896 and today is considered to be an uncommon & rare cause of the acute abdomen. This case report illustrates how ISIGO can mimic common causes of right-sided abdominal pain, principally acute cholecystitis. Since improvements in CT imaging and availability of laparoscopy, increasing cases of ISIGO has been reported .

Case Report

A 52-year-old man presented to the emergency department with severe right-sided abdominal pain. The patient had no significant medical or surgical

history. He reported episodes of sudden onset worsening non-colicky abdominal pain in right hypochondrium with vomiting. On examination, he was tender over the right side of his abdomen, without signs of peritonism. Murphy's sign was positive. Rest of the examination was unremarkable. Urinalysis, blood tests and CRP level was normal.

An initial differential diagnosis was made as cholecystitis.

He was admitted for further imaging. Chest X-ray was unremarkable and had no free air under the diaphragm. An ultrasound of the abdomen revealed a thin walled gallbladder without any calculi and no intra or extrahepatic biliary dilation. There was no free fluid in the abdomen. A normal sized appendix was also identified.

Two days after his admission, the patient remained tender in the RUQ with increasing white cell count & CRP level. A contrast enhanced CT scan of the abdo-

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men and pelvis was performed to further investigate the cause of the pain.

CT scan of his abdomen and pelvis demonstrated focal, mass like mesenteric fat stranding & thickening of greater omentum in right perihepatic region. Its interface with right hepatic margin was intact. It was abutting the antero-lateral abdominal wall & inferiorly it was reaching upto the hepatic flexure. No contrast



Figure 1: Axial slice CECT Abdomen shows focal mass like mesenteric fat stranding & thickening of greater omentum in right perihepatic region. No significant contrast enhancement was seen.

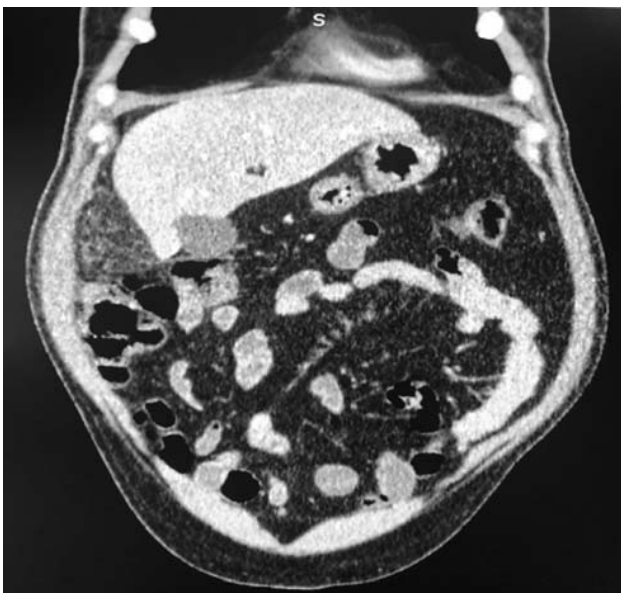


Figure 2: Coronal image CECT abdomen shows the extent of the lesion up to the abdominal wall laterally & up to the hepatic flexure inferiorly.

enhancement was seen on post contrast images. No free fluid was seen in abdomen & pelvis. Normal appendix was identified. Diagnosis of idiopathic segmental infarction of greater omentum (ISIGO) was given.

Patient was subsequently managed conservatively, on oral analgesics, anti-inflammatory medication, and antibiotics. His condition improved & was discharged after one week.

Discussion

The greater omentum is a double layer of the peritoneum, composed of connective tissue, fat, and lymphatics that originates from the greater curvature of the stomach and duodenum. It extends inferiorly to cover the lower abdominal organs by wrapping itself around the majority of the intestines.

Omental infarction can be classified into two categories: primary and secondary as described by Leitner, et al.² In both types, infarction can occur in the absence or presence of torsion of the greater omentum. The infarction results from venous stasis, and haemorrhagic necrosis that are subsequently demonstrated through histological evidence of venous congestion, thrombosis, haemorrhage, and fat cell necrosis.³ Primary omental infarction occurs spontaneously without any aetiology and has consequently been named idiopathic segmental infarction of the greater omentum (ISIGO).

Anatomical variations such as malformation, local variations in fat distribution, and redundant omental veins may predispose patients to ISIGO.⁴ It is hypothesised that the torsion and subsequent infarction can be triggered by compression of the greater omentum between the liver and abdominal wall following local trauma, excessive exercise and increased intra-abdominal pressure secondary to excessive straining or coughing. Secondary omental infarct has an identifiable cause such as neoplasms and inflammatory conditions causing adhesions between the omentum and pathological foci.⁵

The incidence of omental infarction has yet to be accurately determined, but more than 400 cases have been documented in the literature. The condition is most prevalent in children, followed by the adults in

40-50-year-old age category whereby the male to female ratio is 2:1.

The predisposition for right-sided side abdominal pain has been reported as high as 88% of all presentations and is thought to be caused by the longer length and greater mobility of the omentum on the right side in comparison to the left.⁶ Associated features such as altered bowel habit and vomiting are infrequent.

As described in our case, the presentation of omental infarction was mistaken for a more common cause of right sided abdominal pain, i.e. acute cholecystitis. Other differentials to be considered should include appendicitis, viscus perforation, and colitis. In women, gynaecological differentials must be considered such as an ovarian cyst rupture and ectopic pregnancy. In the past, Idiopathic segmental infarction of greater omentum (ISIGO) was diagnosed intraoperatively, but with new advances in imaging technology, it is becoming more readily detectable on CT scan of abdomen.

ISIGO is most frequently represented by fat stranding adjacent to the bowel wall and in particular, fat stranding that is disproportionate to the degree of bowel wall thickening. Differentials for this radiological finding include appendicitis and diverticulitis.⁷ In addition to CT, ultrasound may equally help in clinical decision-making and may be used for the exclusion of gallstones as a likely differential.

There are two approaches for management of omental infarction: conservative management and laparoscopic excision. The choice of management remains controversial and should be decided on case to case basis. Conservative management includes oral analgesia, anti-inflammatory medication, and prophylactic antibiotics. Early surgical intervention can be helpful in case of worsening symptoms & poor response to conservative management.

Conclusion

Evaluation of acute abdominal pain requires a broad differential diagnosis. However after exclusion of common causes, Idiopathic segmental infarction of greater omentum (ISIGO) should be considered amongst the differential diagnoses of right-sided abdominal pain. CECT abdomen remains the inves-

tigation of choice and can accurately identify a focal area of fat stranding around the omentum, which is the most frequent radiological finding. Management should be decided on an individual basis as guided by the clinical and imaging findings.

Conflict of Interest: None

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