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Idiopathic Segmental Infarction of Omentum – A Rare Entity.

General Surgery

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ABSTRACT

Idiopathic segmental Omental infarction is rare cause of acute abdomen. We present a case of a 45-year old man presented with right lower quadrant abdominal pain without gastrointestinal symptoms having no significant past history. Examination revealed localised tenderness and rebound tenderness with ill-defined lump of approx 10x10 cm2 size in the right lower quadrant of abdomen. Ultrasonography (US) showed phlegmonas mass of omentum with trapped mild fluid. Contrast enhanced Computed tomography (CT) scan showed ovoid hypo-dense fat density lesion with stranding of fat in right lower paraumbilical region beneath the abdominal wall, showing insignificant post contrast enhancement, suggestive of segmental Omental infarction. Initially conservative treatment was started but it failed. On exploratory laparotomy the omentum was found to be grossly black-brown colour and thickened without torsion. The infarcted segment of the omentum was resected. Histopathological examination revealed fat necrosis with infiltration by acute inflammatory cells.

Summary: Idiopathic segmental omental infarction is rare cause of acute abdomen mimicking other abdominal pathology. Enhanced CT is helpful. Omentum should be explored routinely when other viscera found to be normal or serosanguineous fluid found. It can be managed conservatively, surgery being reserved for unclear radiological findings or clinical deterioration.

KEYWORDS:

Idiopathic; omentum; segmental infarction

Introduction:

Idiopathic segmental Omental infarction is rare cause of acute abdomen with incidence of 0.1% of the total laparotomies performed for acute abdomen. [1] Omental infarction mimics presentation of appendicitis, peptic ulcer disease, cholecystitis, pancreatitis etc. [2] Gastrointestinal symptoms rarely found. Contrast enhanced Computed tomography (CT) is helpful. It can be managed conservatively, surgery being reserved for unclear radiological findings or clinical deterioration. The rationale for excision rests on early symptom resolution, early patient discharge and less risk of abscess formation, adhesions, and sepsis. [3,4]

Case History:

A 45-year-old man presented to us complaining of right lower quadrant abdominal pain of 8 days of duration without fever. Patient had good appetite without gastrointestinal symptoms such as nausea/ vomiting or diarrhoea. The patient had no relevant past history.

Physical examination revealed pulse 90/minutes, Blood pressure 120/80 mmHg. There was localised tenderness and rebound tenderness with ill-defined lump of approx 10x10 cm2size in the right lower quadrant of abdomen.

Laboratory studies revealed white blood cell (WBC) count of 8 230/mm3 with 58% neutrophils. Coagulation profile was normal. Electrocardiogram & X-rays chest were normal. The Ultra sonography (US) of the abdomen showed complex phlegmonas mass in right lower paraumbilical region comprising of oedematous thickened omentum with trapped mild fluid. Contrast enhanced CT scan showed medium size ovoid hypo-dense fat density lesion (Fig. 1 & 2) with stranding of fat in right lower paraumbilical region, just beneath the abdominal wall, showing in-significant post contrast enhancement suggestive of segmental Omental infarction. Appendix appears normal. Rest of intra-abdominal hollow and solid visceral organs showed no significant abnormality.

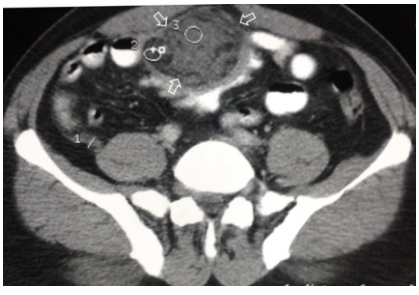

Fig. 1 Enhanced CT in cross section reveals an ovoid hypo-dense fat density lesion (arrows) with stranding of fat in right lower paraumbilical region, just beneath the abdominal wall, showing insignificant post contrast enhancement

Fig. 2 Enhanced CT in sagittal section reveals an ovoid hypo-dense fat density lesion (arrows) with stranding of fat in lower abdomen

Initially conservative treatment was started but it failed & surgery was planned. At surgery, the omentum was found to be grossly black-brown colour and thickened (Fig. 3).

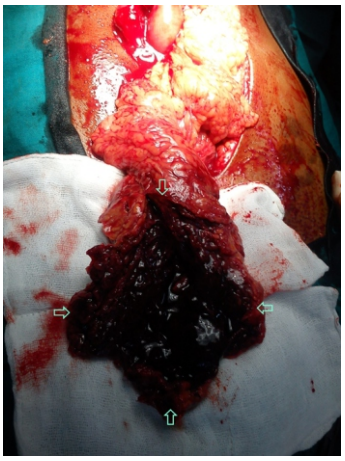

Fig. 3 Grossly black-brown colored, thickened and oedematous infarcted greater omentum (arrows) found during laparotomy

There was infarction without torsion of the right lower segment of the greater omentum in an area of approximately 10x10 cm2. Other Intra-abdominal organs were normal. Sero-sanguineous fluid was present. The infarcted segment of the omentum was resected. Histopathological examination revealed fat necrosis with infiltration by acute inflammatory cells. The postoperative course was uneventful.

Discussion:

Idiopathic segmental Omental infarction is rare cause of acute abdomen with incidence of 0.1% of the total laparotomies performed for acute abdomen. [1]

Omental infarction can be classified as Omental infarction with torsion and Omental infarction without torsion. Each sub classified as primary or 'idiopathic' Omental infarction and Secondary Omental infarction. Discernable aetiology is not found in primary or 'idiopathic' Omental infarction. Possible causes for idiopathic Omental infarction with preponderance for right side includes- (1) Venous engorgement and venous elongation due to heavy meals and excessive weight of the greater omentum in the obese population, (2) Right lower portion of the greater omentum having congenital anomalous fragile blood supply, (3) Different embryonic origin with more fragile blood vessels having susceptibility of elongation and secondary occlusions, (4) Obesity, trauma, coughing or a sudden change in position, overeating, hypercoagulability are associated with alteration in blood supply to the right omental edge, in turn predisposes to Omental infarction. Omental infarction without torsion is secondarily caused by vasculitides, hypercoagulability, and polycythaemia. [1,2]

Omental torsion may be primary or secondary. A third of cases are the consequences of primary torsion. Primary torsion is unipolar without underlying pathology or distal fixation. Factors leading to anatomical variations in the omentum and actions that displace the omentum predisposes to torsion includes - ingestion of heavy meals, bicycle racing, trauma, exercise, effect of lifting, coughing, sudden body movements, laxative use and hyper peristalsis. Obesity is also associated risk factor. Secondary/ bipolar torsion is result of underlying abdominal pathology like cysts, adhesions, hernial sacs etc. causing distal fixation. [2, 5, 6] The exact mechanism leading to infarction in our case remains unclear.

Omental infarction can irritate parietal peritoneum across whole abdomen due to its surface area, contact with anterior abdominal wall, extensive mobility causing multi foci, site specified pain mimicking presentation of appendicitis, peptic ulcer disease, cholecystitis, pancreatitis etc. [2] Clinical presentation of Omental infarction is nonspecific. Patients present with acute or sub acute abdominal pain being constitutionally well. Gastrointestinal symptoms such as anorexia, nausea, vomiting, and diarrhoea are rarely found. Temperature may or may not rise. There is localised tenderness with or without guarding on the right side of the abdomen with or without a palpable mass. C- reactive protein and WBC count may be elevated. Clinically it is difficult to distinguish from common intra abdominal pathology like appendicitis and cholecystitis. [1,3]

Contrast enhanced CT and/or US are helpful in diagnosing Omental infarction with CT being imaging of choice. A well circumscribed, ovoid or cake-like soft tissue mass is found on both USG and CT. On USG there is hyper-echoic non compressible lesion due to omental fat. On Contrast enhanced CT there is mixed attenuation because of fatty and non fatty elements. [1,3,4]

Omental infarction due to torsion have CT-findings of concentric linear strands in the fatty mass, a so-called 'fat spiral pattern' or the 'whirl' sign, and hyperattentuated streaky infiltration. [2, 4] In our case segmental Omental infarction without torsion was diagnosed preoperatively and open exploratory laparotomy was done on failure of coservative treatment.

On histological examination, hemorrhagic infarction with fat necrosis is seen, followed by infiltration by lymphocytes, histiocytes, and finally, fibroblasts, resulting in fibrosis and scar formation. [1]

Management being same, differentiation between Omental infarction with or without torsion is not of practical significance. Omental infarction may be managed conservatively. The conservative management utilises analgesics and anti-inflammatory medication with optimal fluid management in the first instance. [1-3] surgical exploration of the abdomen is mandatory in patients with unclear radiological findings or if the patient's clinical condition deteriorates. Laparoscopic exploration is preferred being both diagnostic and therapeutic and is associated with low morbidity. The rationale for excision rests on early symptom resolution, early patient discharge and less risk of abscess formation, adhesions and sepsis. [3]

Idiopathic segmental Omental infarction should be considered even in the presence of acute appendicitis or other intra abdominal pathologies, especially when other viscera are found to be normal at exploration and/ or if free serosanguineous peritoneal fluid is present. [1]

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