SECONDARY OMENTAL INFARCTION DUE TO DUODENAL PERFORATION

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ABSTRACT
Omental infarction is a rare cause of acute abdomen in adult [1]. Omental infarction is classified as primary when there is no coexisting causative condition identified or secondary when there is association with causative condition. Omental infarction more common in male compared to female and frequently occurs in fourth or fifth decade of life.

Case report:
This is a case report of 45 years old male who is chronic alcoholic presented with features of hollow viscus perforation. Intra operative findings show secondary Omental infarction due to duodenal perforation.

In most of Omental infarction cases was misdiagnosed. But proper radiological investigations with diagnostic laparoscopy improve diagnostic accuracy. High index of suspicion is needed for diagnosis of Omental infarction. Secondary Omental infarction has poor prognosis compared to primary Omental infarction due to underlying disease pathology. Management of omental infarction by either conservative or surgical management by patient presentation or radiological findings. Secondary Omental infarction due to hollow viscus perforation is a dangerous combination, because loss of omentum allow localized pathology to become generalized peritonitis with higher morbidity with mortality. So early recognition and prompt treatment reduces complications.

Key words:
Omental infarction, duodenal perforation, right and left gastroepiploic arteries.

Case:
A 45 yrs old male patient who is known alcoholic and smoker for 20 years duration admitted with complaint of abdominal pain for 4 days duration associated with history of nausea and vomiting for 3 days duration. On examination patient was conscious, oriented, and febrile. Pulse rate - 110/min, BP - 80/60mmhg. Abdominal examination shows distended abdomen. On palpations guarding and rigidity was present. Tenderness more on epigastric and right hypochondrial region. Free fluid present. On auscultations bowel sound was absent [fig 1].

Investigations show anemia with leucocytosis. Elevated renal function test and liver function parameters. Renal function test shows severe dyslectrolytemia (hypokalemia). Erect abdominal x rays shows free gas under diaphragm [fig 2]. CT abdomen shows free fluid [fig .3]. Abdominal paracentesis shows black fluid aspirate. Pre-operative diagnosis made as hollow viscus perforation and laparotomy done. Intra operative findings show a single 1x1cm perforation in the 1st part of duodenum with Omental infarction [fig. 4, 5, 6]. Gangrenous toxic fluid around 3litre was aspiration. As the patient in the morbid condition primary closure of duodenal perforation with omentectomy done along with peritoneal cavity was irrigated with normal saline. Post operative period patient on inotropic support. During 3rd post operative day patient died inspite of resuscitation.

Discussion:
The omentum is rich in lymphatics and blood vessels. The omentum becomes densely adherent to intraperitoneal sites of inflammation for prevention of localized pathology to diffuse peritonitis. Omental infarction is a rare cause of acute abdomen with an incidence equivalent to less than four cases per 1000 cases of appendicitis [2]. Low incidence and non-specific presentation
contribute to Omental infarction being misdiagnosed for appendicitis, peptic ulcer disease, cholecystitis, pancreatitis among other abdominal pathology [2]. Omental infarction is classified as primary or secondary based on etiology. Diagnosis of primary Omental infarction is made when there is no cause, whereas diagnosis of secondary made when there is association with pathology.

<table>
<thead>
<tr>
<th>Primary</th>
<th>Secondary</th>
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<tbody>
<tr>
<td>Obesity</td>
<td>Cyst and tumor</td>
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<td>Local trauma</td>
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<td>Heavy food intake</td>
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<td>Laxative use</td>
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<td>Excessive exercise</td>
<td>Right heart failure</td>
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Figure 1 - Abdomen show distension with guarding and rigidity

Figure 2 - Xray erect abdomen- show air under diaphragm

Classification and aetiology:

Figure 3 - CT abdomen show air fluid level

Figure 4 - Intra operative picture show duodenal perforation
Pathogenesis:
1. Right half of the omentum more commonly involved due to anatomically altered vasculature, less tolerant of spontaneous venous stasis and thrombosis secondary to stretching of Omental veins.
2. Fatty accumulation in the omentum impedes the distal right epiploic artery and additional structural mass potentially precipitates torsion [1].
3. A longer mobile right side greater omentum potentially prone for torsion induced Omental infarction [7].
4. Obesity causes irregularly distributed accumulations of excess omentum and increased fat deposits reduces blood supply to the thickened omentum.

Epidemiology:
Correct pre-operative diagnosis of primary Omental infarction was possible only in 0.6 to 4.8% of all cases. Primary cause of Omental infarction is generally unidentified and the condition may develop with or without torsion. It was first reported by Bush in 1896.

Radiological features
CT finding of an ill-defined heterogeneous mass or interspersed fatty lesion with hyper attenuating streaky infiltration located in the omentum in early stage, and thus progress to a well-defined, smaller lesion with hyper dense rim in the late phase [8]. Concentric linear strands or the whirl sign and hyper attenuating streaky infiltration both are pathognomonic feature of Omental torsion.

Management:
Park et al argue that on collective balance, surgery should not be first line of management, particularly as better imaging accessibility forgoes the need for surgery [7]. But some authors recommending for surgical management by means of laparoscopic approach is better for considering complication.

Conclusion:
In most of Omental infarction cases was misdiagnosed. But proper radiological investigations with diagnostic laparoscopy improve diagnostic accuracy. High index of suspicion is needed for diagnosis of Omental infarction. Secondary Omental infarction has poor prognosis compared to primary Omental infarction due to underlying disease pathology. Management of Omental infarction by either conservative or surgical management by patient presentation or radiological findings. Secondary Omental infarction due to hollow viscus perforation is a dangerous combination, because loss of omentum allow localized pathology to become generalized peritonitis with higher morbidity with mortality. So early recognition and prompt treatment reduces complications.
REFERENCES:


