Case Report

Acute Mesenteric Vascular Occlusion

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Abstract
A 63 years old patient was admitted in medical unit for coronary heart disease. He developed sudden, severe, diffuse abdominal pain. During exploratory laparotomy, small intestine was found gangrenous. This rare case of mesenteric ischemia in a patient of coronary artery disease is presented to emphasize its possible causes, complications of gangrenous bowel and post operative complications.

Key words: Gangrenous bowel, Laparotomy, Mesenteric ischemia.

Introduction
Acute mesenteric ischemia (AMI) is a medical condition in which inflammation and injury of the small intestine occurs due to inadequate blood supply.1,2 It is more common in the elderly.3,4 The incidence in United States is 1 in 1000 hospital admissions.5 It carries a high mortality which is directly related to diagnostic delay. The diagnosis is delayed because the patients with acute mesenteric ischemia produce nonspecific signs. These clinical features are caused by impaired perfusion to the bowel, bacterial translocation and systemic inflammatory response syndrome.4 Treatment of acute ischemia may include stenting or medications to break down the clot provided at the site of obstruction by interventional radiology.6 Some recommend a trial of thrombolytic therapy if patients can be treated within 8 hours of presentation and do not have signs of bowel necrosis or peritonitis.7 Open surgery may also be used to remove or bypass the obstruction and may be required to remove parts of intestine that have died.8

Case Report
A 63 years old patient was admitted in medical unit and being treated for coronary heart disease. Patients also had history of hypertension and diabetes mellitus. He developed sudden, severe, diffuse abdominal pain. The pain was accompanied by vomiting along with abdominal distention and constipation. Examination of the abdomen revealed moderate distension with tenderness more marked in the right flank. The patient was pale, anxious and dehydrated with signs and symptoms of shock. The abdominal ultrasonographic examination revealed a diffuse mass with fluid collection in right Iliac fossa suggesting intestinal obstruction with appendicular abscess. The patient was managed with nasogastric decompression, broad-spectrum antibiotics and intravenous fluids. Laboratory investigations showed leukocytosis, hypokalemia and anaemia with normal amylase level.

After resuscitation, laparotomy was performed. Abdominal cavity showed blood stained exudate. The small intestine was gangrenous extending from the distal part of the Ileum to about 30cm proximal to ileo-cecal junction. Resection of gangrenous intestine with end-Ileostomy was performed; followed by thorough peritoneal lavage. After 24-36 hours, the Ileostomy stump was found dusky black. Second look procedure, needing further resection of apparently non-viable intestine was offered but denied by the relatives. The post operative course of the patient was turbulent as expected. Histological examination of resected specimen showed necrosis of all layers showing edema, and haemorrhage in the submucosa.

Discussion
Mesenteric ischemia is a rare disorder involving mesenteric vessels. It can be due to arterial emboli (mural thrombus following myocardial infarction, auricular thrombus associated with mitral stenosis and atrial fibrillation, septic emboli from valvular endocarditis, fragments of proximal aortic thrombus, arterial catheterization dislodging bits of plaque), arterial thrombosis; (atherosclerosis, aortic aneurysm or dissection, arteritis, decreased cardiac output due to myocardial infarction or dehydration), drugs (vasopressive, ergotamines, cocaine, digitalis), tumor causing venous compression or hypercoagulability, infections such as appendicitis, diverticulitis, or abscess, venous congestion from cirrhosis (portal hypertension).9

Because AMI may proceed to fatal intestinal infarction rapidly, prompt diagnosis and treatment are of paramount
importance. A high index of suspicion in the setting of a compatible history and physical examination serves as the cornerstone to early diagnosis of mesenteric ischemia. Acute mesenteric ischemia should particularly be considered in the differential diagnosis when a patient is older than 60 years; has a history of atrial fibrillation, recent myocardial infarction, congestive heart failure, arterial emboli, or postprandial abdominal pain and weight loss; and is initially seen for abdominal pain that is out of proportion to that suggested by physical examination. Survival is approximately 50% when diagnosis occurs within 24 hours after onset of symptoms, but it drops sharply to 30% or less when diagnosis is delayed.\textsuperscript{10,11} Plain radiograph is helpful initial tool but findings on a plain abdominal radiograph in AMI are nonspecific.\textsuperscript{12,13} Abdominal CT has poor sensitivity and specificity in the diagnosis of most types of AMI. Dynamic contrast-enhanced CT may improve sensitivity to 64% and specificity to 92%.

Standard surgical therapy for AMI involves resection of irreparably damaged bowel and reestablishment of mesenteric blood flow through embolectomy. Patients with minor emboli, defined as emboli limited to superior mesenteric artery (SMA) branches or to the SMA distal to the ileo-colic artery, may be managed without operation with volume resuscitation, broad-spectrum antibiotics, vasodilators, and anticoagulants.\textsuperscript{14}

**Conclusion**

AMI is a relatively uncommon cause of abdominal pain, but one with a high mortality rate. Its prompt recognition and aggressive treatment can prevent bowel infarction and improve outcome. In the proper clinical setting, it is crucial to maintain a high index of clinical suspicion so that a correct diagnosis can be made and treatment initiated expeditiously.

**References**

8. Yelon, Jay A. Geriatric Trauma and Critical Care New York 2013; Springer Verlag. p. 182.