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A Case Report of Ascending Colon Perforation in A Diabetic Patient

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Abstract
Spontaneous perforation of colon is a rare disease with unknown etiologies. It is classified into stercoral and idiopathic types. Stercoral perforation is associated with ulcerative lesion, often in the sigmoid colon or rectum, or rarely in the cecum. The Stercoral perforation is a "round" or an "ovoid" hole with necrotic and inflammatory edges. Idiopathic perforation is a linear "tear" with a normal appearance of the colonic wall. The natural history of the 2 types have many similarities. Both entities are infrequently diagnosed preoperatively and are associated with a high mortality rate. A high index of suspicion is required for early diagnosis and treatment. But generally, stercoral perforations of the colon may be preventable. Surgical treatment is standard management and morbidity and mortality rate depends on peritoneal contamination. Here we have presented a case of ascending colon perforation in an elderly patient associated with type-2 diabetes mellitus.
Keywords: *Stercoral, perforation.*

Introduction

Spontaneous perforation of colon is a uncommon large bowel pathology. It is more common in premature infants and elderly with chronic constipation but can occur in any age group [1]. It results in peritonitis with high fatality. It should be considered in differential diagnosis of acute peritonitis. Less than 100 cases were reported in literature with still less cases in ascending colon perforation [2]. The present case is probably the first report in English literature to document spontaneous ascending colon perforation in a middle aged type-2 diabetes mellitus patient.

Case Report

A 42- year- old man presented with complaints of pain abdomen in periumbilical region for four day, abdomen distension and not passing flatus and stools for 2 days, associated with nausea. The pain later shifted to right iliac fossa. There was no history of bleeding per rectum, anorexia and weight loss. Patient had chronic history of constipation for 12 years. He was on antidiabetic drugs Metformin 500 mg and glimepride 2mg once daily for type-2 diabetes mellitus.

On examination, he was afebrile with pulse of 118/min, blood pressure of 106/78 mm Hg. Per

abdominal examination showed generalized distension and guarding with rigidity more localized to right flank region. Bowel sounds were absent. Per rectal examination showed only fecal matter.

Blood investigations showed total leucocyte count of 3320 per microlitre, hemoglobin of 15.4 gm/dl, fasting blood sugar of 257 mg/dl. Other laboratory investigations were within normal limits. X-ray abdomen showed multiple air fluid level with variable opacities in right iliac fossa region suggestive of collected fecal matter.USG abdomen suggested the diagnosis of appendicular perforation. Patient was treated with i.v. anti-biotics, injection insulin and intravenous fluids.

Exploratory laparotomy revealed a linear perforation of seven cm on the anterior aspect of ascending colon with omentum walling off fecal contamination to right side preventing generalized peritoneal cavity contamination. After thorough peritoneal lavage, primary repair of perforation was done with proximal loop ileostomy.

Postoperatively, he made uneventful recovery apart from mild wound infection which responded well to the daily dressings. Histopathology report revealed chronic infilterate in mucosa and muscle with inflammatory cells. He was discharged in good condition and planned for ileostomy closure after a follow up of three months.

Fig 1: perforation in ascending colon

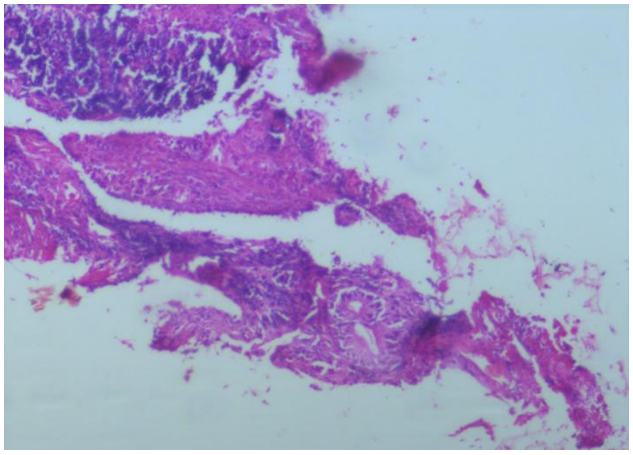

Fig 2: HPE showing chronic inflammation

Discussion

Spontaneous perforation of the colon is a rare condition. J.A. Berry classified spontaneous perforations into "stercoral" and "idiopathic" perforations based on etiopathology. The natural history of the 2 types have many similarities. Both entities are infrequently diagnosed preoperatively and are associated with a high mortality rate.[3]

Stercoral perforation begins with ulcerative lesion in colon which progresses to a "round" or an "ovoid" hole with necrotic and inflammatory edges [3]. The disease has often been seen in patients with chronic constipation. Stercoral perforation is common in sigmoid (Sudeck's point), rectosigmoid regions [3]. This is due to the physiological ischemia because there is no anastomosis between the lowest branch of sigmoid arteries and the superior rectal artery.

Idiopathic perforation is a linear "tear" with a normal appearance of colonic wall. The mucosal edge is clear and does not extend to the serosa. It occurs more often in rectosigmoid, cecum, transverse and descending colon [4]. Two hypotheses have been proposed to explain idiopathic perforations: Vascular theory which suggests combination of hypoperfusion of colonic tissue & constitutional weakness of the bowel wall with increased intraluminal pressure which may be due to intestinal hernia, rectal prolapsed[3]. Second theory proposes asymmetrical distribution of intraluminal pressure at the pelvi-rectal angle in absence of obvious impacted stool or any identifiable cause of perforation.

Several reports of large bowel perforations have been associated with chronic use of non-steroidal anti-inflammatory drugs and chronic constipation. [5] They lead to inhibition of cyclooxygenase and reduction of protective prostaglandins. The local damage of the intestinal mucosa in the distal bowel segments seems to be caused by sustained release formulation with a high enterohepatic circulation [5]. Drug induced fecal impaction occurs due to opiates, antacids, codeine, amitriptyline, and tranquilizers.

Diagnosis of SPC is based mainly on exclusion of other organic causes of perforation. Intraoperatively, it is difficult to distinguish between types of perforation so, surgical pathological examination is necessary to make a definite diagnosis. The principle of management of SPC is prompt surgical intervention, excision of the affected segment and extensive peritoneal lavage with antibiotics[3]. Primary repair with proximal loop ileostomy was the treatment of choice in our case as the perforation was large and located on ascending colon. Other surgical options include hemicolectomies, Hartman procedures, and diverting colostomies depending on site of perforation. Generally, spontaneous perforation of the colon is rare in western countries compared to perforations associated with the more prevalent diverticulosis and malignancy[6]. Diverticular disease is rare among Asians and Africans [6].

Conclusion

SPC is a rare but serious condition. Spontaneous perforation of the colon should be considered in the differential diagnosis of patients with acute peritonitis. The result of SPC management depends on the time of onset, extent of peritoneal contamination and timely surgical intervention .The idiopathic type is less common than stercoral type but the prognosis is better because of comparatively less degree of fecal contamination. The stercoral type is associated with chronic constipation and the use of NSAIDs. Till now its association with DM is not known but it may have a role in its pathophysiology. Prevention of perforation may be achieved by increasing the awareness of the general people as well as the medical personnels regarding constipation and its association with colon perforation. Smaller doses of NSAIDs should be advocated in a chronically constipated patient. NSAIDS should be used for minimum duration. Hyperglycemia should be adequately treated.

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