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EXTENSIVE COLONIC ISCHEMIA: "WHAT TO DO?"

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ABSTRACT

Ischemic colitis is the most common type of intestinal ischemia. It is an insult to the colonic wall resulting from diminished blood flow. The spectrum of the insult or necrosis can be from superficial, which are mucosa and submucosa layer till full thickness necrosis of the bowel wall. In 1963, Boley was the 1st one reconignized the clinical presentation of ischemic bowel. A 39 years old Burmese gentleman presented with peritonism. Intaoperative noted extensive ischemic colitis. There are 2 types of Ischemic colitis regarding the anatomic distribution of the disease. Left sided ischemic colitis and righ sided ischemic colitis. We would like to discuss regarding the diagnostic dilemma and anatomic peculiarity to facilitate the surgical resection. We advocate an extensive colectomy (nearly subtotal colectomy) may be better option for an extensive ischemic colitis in a stable patient.

Keywords: Intestinal ischemia, ischemic colitis, colectomy.

INTRODUCTION:

Intestinal ischemia especially colonic ischemia is a relatively uncommon cause of abdominal pain. The abdominal pain caused by intestinal ischemia is not proportional to the physical examination findings. The majority of patients with ischemic colitis can be treated medically, but approximately 20% of the patients deteriorate and develop peritonitis with sepsis. This group requires surgical intervention with carries 60% of mortality rate. Ischemic colitis is a life-threatening condition whose prognosis depends on early recognition, accurate diagnosis and early intervention. We would like to discuss regarding the diagnostic dilemma and anatomic peculiarity to facilitate the surgical resection. We advocate an extensive colectomy (nearly subtotal colectomy) may be better option for an extensive ischemic colitis in a stable patient.

CASE PRESENTATION:

A 39 years old Burmese gentleman presented with complaint of generalized abdominal pain for the past 1 month which was persistent, colicky in nature and radiates to the back associated with nausea and vomiting postprandial and watery yellowish stool mixed with fresh blood. He also had constitutional symptoms. On examination patient was dehydrated. Per abdomen was generalized tenderness, guarding with sluggish bowel sound. Chest X-ray showed no pneumoperitoneum and abdominal X-ray no dilated bowel loops. We proceeded with CT Abdomen showed intraperitoneal fat streakiness with minimal fluid collections, small extraluminal free air pockets near the mid descending colon suggestive of perforated viscous (Figure 1).

We proceeded with exploratory laparotomy. Intraoperatively noted the more than 2/3 omentum of was necrotic. The anterior surface of caecum, hepatic flexure, proximal transverse colon noted grayish necrotic patches measuring about 1.5 cm in diameter) figure 2 and 3). The small bowel from the DJ junction to ileocaecal junction was viable. Our diagnosis was sealed colonic perforation due to extensive ischemic colitis. Patient condition was very unstable and defunctioning ileostomy was performed. After 24 hours re - laparotomy done and noted extensive gangrene of small bowel, transverse colon and proximal descending colon. Massive bowel resection with covering ileostomy was done. Patient did not recover from sepsis and finally expired on post op day 4 with multi organ failure.The small and large bowel HPE showed extensive mucosa ulceration with large area of necrosis.

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Figure 1: CT Abdomen showed significant intraperitoneal fat streakiness with minimal free fluid collections with extraluminal free air pockets near the mid descending colon.

Figure 2: Intraoperative showed more than 2/3 omentum of was necrotic.

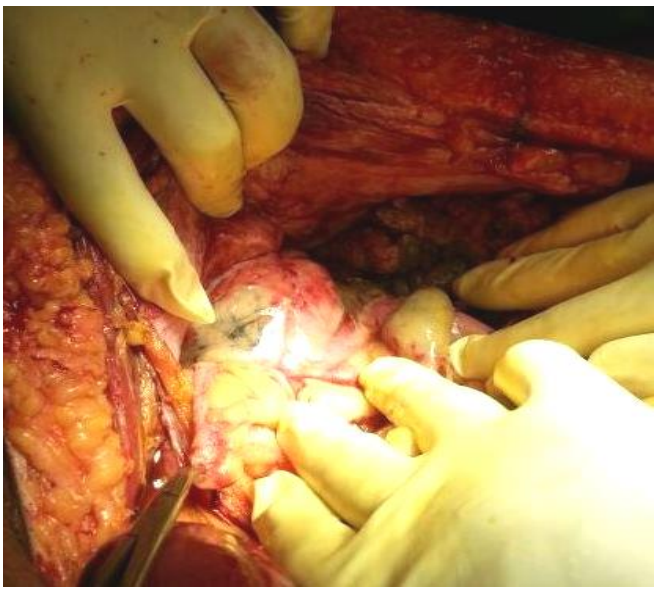

Figure 3: Intraoperative showed there are greyish necrotic patches over the colon (anterior surface of caecum, hepatic flexure, proximal transverse colon) (each patch measuring about 1.5 cm in diameter)

DISCUSSION:

Intestinal ischemia especially colonic ischemia is a relatively uncommon cause of abdominal pain which is a life-threatening condition whose prognosis depends on early recognition.We would like to discuss the anatomic peculiarity to facilitate the surgical resection.

In 1963, Boley et al. 1st identified the clinical entity [1]. The classical presentation triads are abdominal pain, hematochezia with leucocytosis in an elderly patient [2]. However, the presentation might be varies due to extend of ischemia, length and thickness of the colonic wall involvement. Brandt and Boley classified ischemic colitis based on degree of the histopathological damage in the colonic wall into 5 catagories, reversible colopathy (submucosal or intramural bleeding), transient colitis, chronic segmental ischemia, gangrenous colitis and universal fulminant colitis.Example, if small segment of the mucosa ischemia it resemble as crampy abdominal pain with minimal rectal bleeding. Abdominal tenderness usually extends to the distribution of the segment involved [3, 4]. In full thickness of the colonic wall involvement, patient present is in sepsis and peritonitism as in our case scenario.

The risk factors are elderly patient, hypertension, diabetes mellitus, nephropathy, previous gastrointestinal surgery, abdominal aortic aneurysm surgery, or major cardiovascular surgery. Illicit drug and medications are mainly cocaine and methamphetamines [5].

Usually patients with ischemic colitis have atypical clinical presentation. This causes a dilemma in diagnosing ischemic colitis at early point of time. To facilitate a laboratory and radiological investigation are helpful. Patient with ischemic colitis normally will have Leucocytosis, metabolic acidosis, elevated in lactate; amylase and lactate dehydrogenase level which suggestive of severe ischemia of the bowel wall.

Meanwhile, radiological investigation, a plain abdominal X-rays has a low sensitivity in diagnosis of ischemic colitis. It is only helpful to exclude visceral perforation by showing pneumoperitoneum. CT scan is the most helpful imaging that have hallmark of ischemic colitis such as “thumbprinting sign” which resembles focal mucosal thickening due to submucosal hemorrhage or edema and “Pneumatosis intestinalis” gas formation into the bowel wall [6].

The role of colonoscopy should be performed on the unprepared bowel within 48 hours of the onset of ischemic colitis symptoms. It is a diagnostic tool of choice to evaluate the extent of the mucosal ischemia and helps to establish the diagnosis by obtaining biopsy specimens [2].

Transient, self-limited ischemia involving the mucosa and submucosa has a good prognosis, while fulminant ischemia with transmural infarction carries a poor one as it can progress to necrosis and death. Although up to 85% of cases of ischemic colitis managed conservatively improve within 1 or 2 days and resolve completely within 1 or 2 weeks, close to one-fifth of patients develop peritonitis or deteriorate clinically and require surgery [7, 8].

Surgical resection is required when irreversible ischemic injury and chronic colitis develop, as both can lead to

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sepsis, colonic stricture, persistent abdominal pain and bloody diarrhea [9]. The spectrum of surgical management depending on the severity or extend of the bowel involvement. Exploratory laparotomy with possible subtotal or segmental colectomy may be needed in acute setting when patient present with peritonism signs, massive bleeding, and fulminant ischemic colitis. Subacute whereby lack of resolution, with symptoms that persist for more than 2 or 3 weeks and chronic settings when the patient develops colonic stricture and are symptomatic [10].

The option for right hemicolectomy with primary anastomosis is feasible in case of right sided colonic ischemia and necrosis provided the remaining bowels are viable. Meanwhile, left sided (sigmoid and the descending colon) colonic ischemia is managed with Hartmann's procedure. The decision for Re-anastomosis and ostomy closure is usually done after 4 to 6 months duration [11]. However, resection and primary anastomosis can also be an option for patients with isolated ischemia of the sigmoid colon [12].

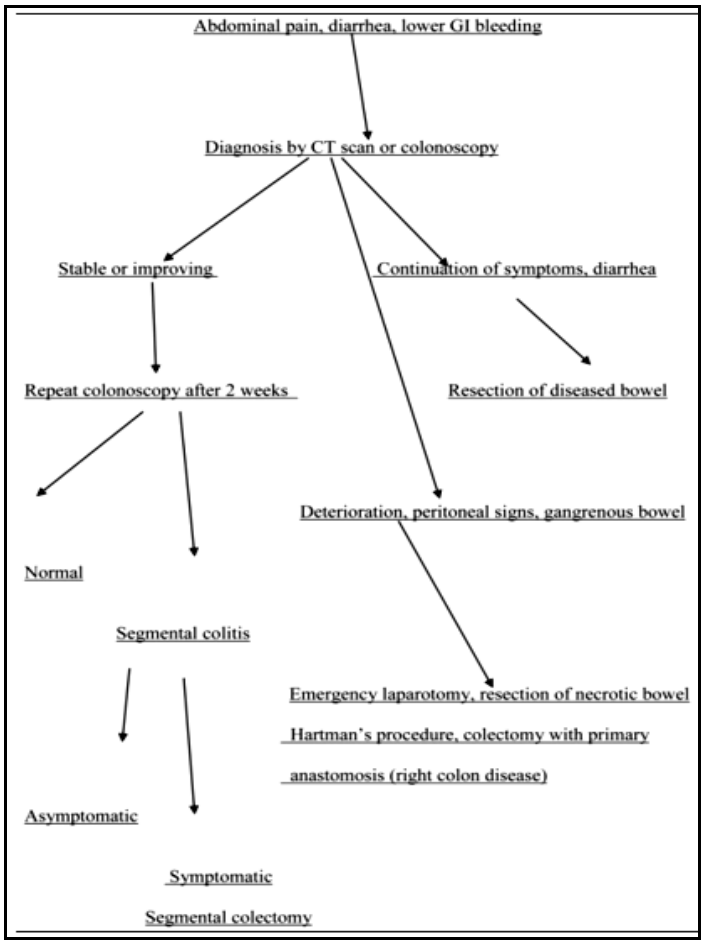

Figure 4: Showed the algorithm of treatment for ischemic colitis

CONCLUSION:

Ischemic colitis can be varies due to extend of ischemia colonic wall involvement and the clinical presentation varies. Extensive colectomy (nearly subtotal colectomy) may be better option for first laparotomy in this patient's condition if the case was reviewed retrospectively. However absence of other obvious medial co morbidity, unusual presentation and very unstable patient's condition made management not easy and straight.

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