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COEXISTENT TUBERCULAR PERFORATION AND TYPHOID FEVER: A DIAGNOSTIC AND THERAPEUTIC CHALLENGE

Gastroenterology

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ABSTRACT

Diagnosis of intestinal TB is a difficult task for physicians due to its nonspecific symptoms. Typhoid fever and tuberculosis are the most common causes of infectious perforation in developing countries. Herein we present a case of a 30 year old man with tubercular perforation with typhoid co-infection. He presented to the ER with fever since 2 months and abdominal pain since 3 days. On examination there was abdominal distention, x-ray of abdomen (erect) revealed air under the diaphragm and USG of the abdomen revealed tiny air pockets around the ileum. His widal test was positive for salmonella infection and was started on IV antibiotics and was taken up for an emergency exploratory laparotomy. Multiple ileal perforations with multiple mesenteric lymphadenopathy were seen intra-operatively. Resection of 60cm of distal ileum was done which lateral revealed transmural granulomas with caseous necrosis on histopathological examination. The patient was then diagnosed with tubercular perforation and he was started on ATT post-operatively. As typhoid fever is more frequent than tubercular perforation, a typhoid coinfection in this patient led to a delay in diagnosis.

KEYWORDS

Tuberculosis, Intestinal perforation, typhoid fever

INTRODUCTION:

Tuberculosis is one of the major causes of ill health around the world. Pulmonary TB is the primary focus of tuberculosis and is the focus of the WHO. When TB affects other organs apart from the lungs, it is termed as extrapulmonary Tb (EPTB). About 8-14% of the cases notified to the WHO are EPTB. In India, about 20% of the cases are of EPTB, out of which 34% is lymphatic, 25% pleural and 13% abdominal. [1] Intestinal TB is the 2nd most common type of abdominal TB with the first being peritoneal TB. The most common complication of intestinal TB is obstruction followed by intestinal perforation which occurs in 4%-7.5% of the cases and carries a mortality rate of upto 30% in various studies [2-4]. A study carried out in Delhi shows tubercular perforation as the cause of perforated peritonitis in 3.1% of all cases of perforated peritonitis [5]. Herein we present a case of 30 year old man with Intestinal perforation who had typhoid coinfection along with intestinal tuberculosis.

Case:

A 30 year old male patient presented to the emergency department with complains of abdominal pain since three days. On further questioning, he gave a history of fever since two months. Fever was on and off for two month, which relieved on taking medications given at a local hospital. He has no history of similar complains in the past. No history of any surgeries in the past. He has no comorbidities like diabetes or hypertension. On examination patient had fever and Pulse rate of 107bpm (tachycardia) and Blood pressure of 80/60mmhg. Abdominal examination revealed a distended abdomen with a central inverted umbilicus. Local rise of temperature and diffuse tenderness was present with guarding of the abdomen. On percussion, a resonant note was heard all over the abdomen with the absence of liver dullness. On auscultation sluggish bowel sounds were heard.

On reviewing his older reports it was found that the patient was diagnosed with typhoid fever 3 days ago and was on medications (details of which are not known). According to the reports, in Widal test, the O Antigen titer was 1:320 dil. H Antigen titer was 1:80. AH Antigen titer was 1:40 dil. BH Antigen titer 1:40 dil. An erect abdomen x-ray was ordered and showed air under the diaphragm (figure 1) with distended loops of bowel (figure 2). Complete hemogram revealed a Hemoglobin level of 7.9g/dl (14-18g/dl), RBC count of 3.54 million/cumm(4.5-5.60million/cumm). HCT of 25.0(37-42), MCV 70.6fl (82-98fl), MCH 22.4pg (26-34pg), WBC count of 9210cells/cumm (4000-1000cells/cumm) with 80% neutrophils (40-70%) and 14% lymphocytes (20-40%), Prothrombin time 24.7sec (control 13.5 seconds), INR of 1.9. An abdominal ultrasound revealed loculated and septated collection of tiny air pockets around ilium, thick echogenic fluid with moving internal echoes at RIF and LIF with diffuse thickening of bowel wall involving terminal ilium and mild thickening of caecum.

Figure 1: showing air under the diaphragm

Figure 2: shows distended loops of bowel

The patient was diagnosed with Intestinal Perforation with Dimorphic Anemia with Relative Neutrophilia with peritonitis in shock.

Patient was started on IV Fluids and broad spectrum antibiotics- IV Piperacillin and Tazobactum and IV Metronidazole and was shifted to the operation theatre. Two pints of PRBC AND two pints of FFP was transfused during the Surgery and the patient underwent an Exploratory Laparotomy with Resection of the Perforated Ileal segment (60cm)with side to side ileo-ascending anastomosis with proximal diverting loop ileostomy with lavage. The resected segment was sent for histopathological examination.

Intra-op findings include multiple ileal perforations starting from 6-8cm from ileocecal junction with the largest measuring 2cm X1cm (figure 3) and the presence of multiple adhesions with pelvic structures (rectum and sigmoid), abdominal wall, ileoileal and mesentry. Multiple mesenteric lymphadenopathy (figure 4) and fecal contamination was also present.

Figure 3: Multiple ileal perforations

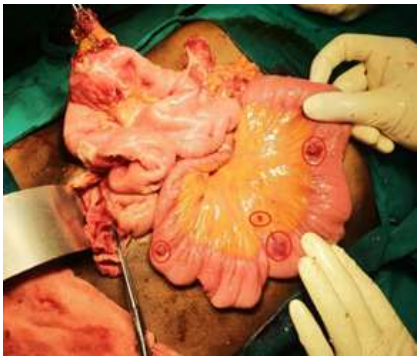

Figure 4: multiple mesenteric lymphadenopathy

Post op diagnosis was- Multiple Ileal Perforation Secondary to Typhoid with Peritonitis in Shock and was on IV Meropenem 1g twice daily and IV Metronidazole 500mg thrice daily. One pint of PRBC was transfused on the next day. Stoma started functioning on POD-2. Patient was started orally and tolerated it well. SSI was present on POD-5 and regular dressing was done.

The histopathological examination later showed features suggestive of tubercular perforation. Sections from the perforated sites showed ulcerated ileal mucosa lined by granulation tissue. Transmural granulomas were seen, having central caseous necrosis surrounded by langhans giant cells, epitheloid cells and lymphocytes (figure 5). Multiple enlarged lymph nodes were studied with largest measuring 1cmX0.5cm. Microscopic examination of these lymph nodes shows caseating granulomatous lymphadenitis. AFB stain was negative.

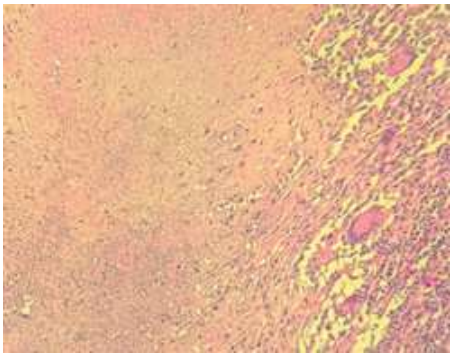

Figure 5: Histopathological picture: showing caseous necrosis and multinucleated giant cells

The patient was then diagnosed with Intestinal perforation secondary to tubercular perforation with typhoid fever coinfection. He was started on ATT and was discharged after thirteen days of hospital stay.

DISCUSSION:

Ileal perforation is one of the commonest surgical emergencies in developing countries. The most common cause of infectious perforation is typhoid and tuberculosis. Infection of the GI tract occurs in one of the following ways, (i). Swallowing of infected sputum in active pulmonary TB cases. (ii) hematogenous or lymphatic spread from distant sites. (iii) direct spread from adjacent structures. (iv) ingestion of milk products infected with mycobacterium bovis [2].

Abdominal TB usually occurs in four forms- peritoneal TB, Intestinal TB, tuberculous lymphadenopathy and visceral TB involving solid organs. Pathological types of intestinal TB include hyperplastic, ulcerative and mixed types. Hyperplastic type usually presents with a mass and causes intestinal obstruction, whereas ulcerative type of lesions causes intestinal perforation.

Intestinal TB usually present with vague, non-specific symptoms. It is often described as 'protean; manifestations [3]. The symptoms of Gastrointestinal TB often mimic other diseases like esophageal ulcer, esophageal cancer, submucosal tumor, ulcerated gastric mass, colorectal carcinoma and crohns disease. Due to its non-specific nature of presentation, intestinal TB is diagnosed late.

Intestinal TB perforation usually occurs near the ileocecal junction due to the presence of payers patches and constricted passage which leads to long contact time. In case of perforation the patient presents most commonly with sudden onset abdominal pain along with vomiting, constipation and fever. On x-ray of erect abdomen, air under the diaphragm is seen, which is indicative of bowel perforation [4]. Though CECT remains the diagnostic modality of choice, this is usually avoided in patients presenting with intestinal perforation as it leads to delay in definitive management, hence it was avoided in this case.

The patient is then started on IV fluids and antibiotics, urine output and vitals should be monitored in regular intervals and emergency laparotomy is done to identify the site of perforation as done in our patient.

Various surgical procedures described are simple repair of perforation after debriding the edges of the perforation site, resection of the perforated segment and primary anastomosis, resection of bowel and creating a double barrel stoma. Primary anastomosis is done in patients with minimal contamination and absence of significant bowel edema. Our patient had a resection with ileoascending anastomosis with proximal diverting loop ileostomy with lavage due to the presence bowel edema and severe abdominal contamination.

There were no signs of tuberculosis like strictures or tubercles intraoperatively, hence the patient was assumed to have typhoid perforation and was managed for the same. The histological report was available only 10 days after the surgery which led to delay in the initiation of antitubercular therapy. A six month ATT standard first-line regimen is recommended for abdominal TB with strong evidence [6]. Treatment with corticosteroids along with ATT offers benefits by reducing inflammation and preventing post-inflammation fibrosis [7]. Despite the fact that identification of mycobacterium tuberculosis bacteria in culture in gold standard, the mere absence of this should not rule out abdominal TB. The established microbiological and molecular methods of diagnosis have poor sensitivity for abdominal tuberculosis [8]. Activity of ascitic fluid ADA has been proposed to be a useful test for abdominal TB cases. A value of ADA higher than 0.40uKat/l has 100% sensitivity and a specificity of 99% for diagnosing tubercular peritonitis. However ascitic fluid ADA activity is good in accuracy but poor in sensitivity and imperfect in specificity in developing countries due to the low incidence of tuberculosis and high prevalence of cirrhosis which can cause elevated ADA levels [9].

CONCLUSION:

As tubercular perforation is one of the uncommon cause of intestinal perforation in developing countries, the presence of a co-infection with typhoid fever led to a delay in diagnosis. By this case report one can understand that abdominal tuberculosis can remain silent without any symptoms until complications occur and its symptoms can mimic many other diseases. As histopathological examination for confirmation can take time leading to delay in treatment, it is important for the clinician to always consider tubercular perforation as a differential diagnosis. Early diagnosis can buy valuable time for prompt treatment and potentially improving patient outcomes.

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Keywords: Perforation, tuberculosis, typhoid fever, coinfection, anastomosis

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