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Tubercular ileal perforation – a case report and review of literature

1. Dr. Parthasarathi Hota
Assistant Professor
Department of General Surgery
Pacific Institute of Medical Sciences
Udaipur , India

2. Dr. Apurva Damaraju
Junior resident
Department of General Surgery
Pacific Institute of Medical Sciences

3. Dr. Yash Modh
Junior resident
Department of Pathology,
Pacific Institute of Medical Sciences

Abstract

Though primary intestinal tuberculosis is common in India, its diagnosis and differentiation from inflammatory bowel disease is difficult. Intestinal perforation is an uncommon but potentially fatal complication of intestinal tuberculosis. We present a 27 year old HIV negative patient presented with peritonitis with solitary perforation of terminal ileum. Histology revealed caseous necrosis with multinucleated giant cell. Patient was operated and later advised anti-tubercular medication.

Keywords : Primary intestinal tuberculosis, tubercular perforation , ileal perforation

Introduction

Perforation of a hollow viscus leading to peritonitis is a common surgical emergency. Although peptic ulcer perforations account for the majority of cases of peritonitis, small bowel perforations are also commonly encountered. Usually, these small bowel perforations are secondary to enteric fever or trauma, but at times, non- specific ileal perforations are also seen. Tuberculosis remains an uncommon cause of perforation of the small bowel, even in areas where tuberculosis is rampant.[1] We report a case of a free tubercular perforation of the ileum that presented with peritonitis and was managed at our hospital.

The complications of intestinal tuberculosis are bowel obstruction (31.7%), intestinal perforation (4.9%), enterocutaneous fistula (2.4%) and small bowel volvolus due to mesenteric lymphadenitis (2.4%) . Free intestinal perforation is an uncommon complication of intestinal tuberculosis because of reactive thickening of the peritoneum and formation of adhesion with surrounding tissues . It account 1-10% of abdominal tuberculosis cases and it has a poor prognosis with mortality rate higher than 30%. [2]

Case Report

A 27 years old male presented to General Surgery OPD with complaints of pain in abdomen, vomiting and loose stools for last three days. Pain in abdomen is generalized more in umbilical region, gradually progressive in nature, no aggravating or relieving factors and non radiating. Associated with vomiting 3-4 episodes per day, content being food particles and loose stools 2-3 episodes per day. We did not get any other significant history from the patient. When palpating the abdomen, local temperature was raised, guarding and rigidity present with distended and tense abdomen. Peristaltic sounds were absent.

Patient was febrile with leucocyte count of 13000/cumm. X-ray chest and abdomen showed free air under diaphragm which suggested of hollow viscus perforation. HRCT Thorax was performed which suggested of free air density in peritoneal cavity, possibly perforation.

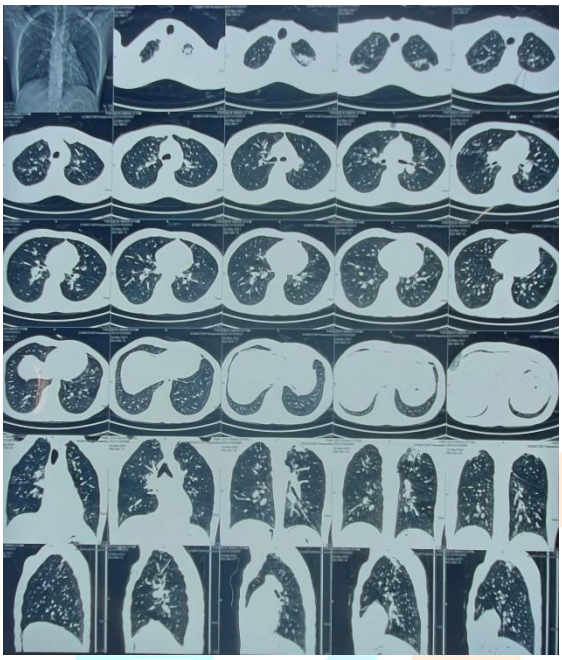

Fig 1

Fig 2

[HRCT thorax and straight x-ray abdomen shows free gas under diaphragm]

He was taken for emergency exploratory laparotomy after resuscitation and found a mid ileal perforation and gross contamination. Thorough peritoneal lavage done and the involved part taken out as loop ileostomy. The edges of the perforation were sent for histopathological examination which suggested of granulomatous lesion of intestinal tuberculosis.

The post- operative period was uneventful and patient was started on anti-tubercular treatment.

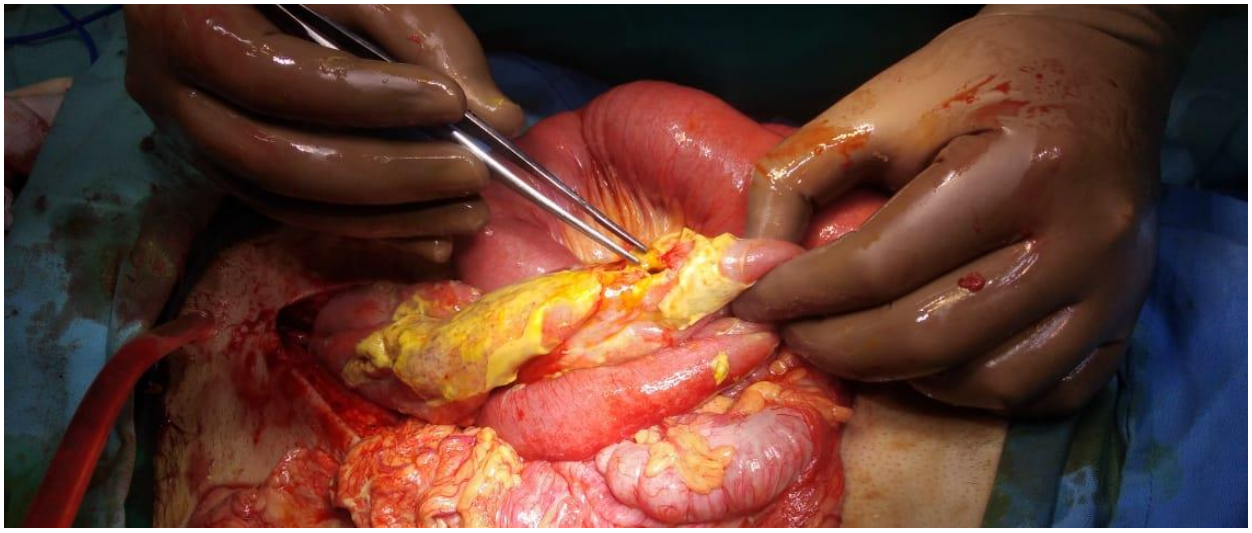

Fig 3 – Intra operative picture shows solitary ileal perforation

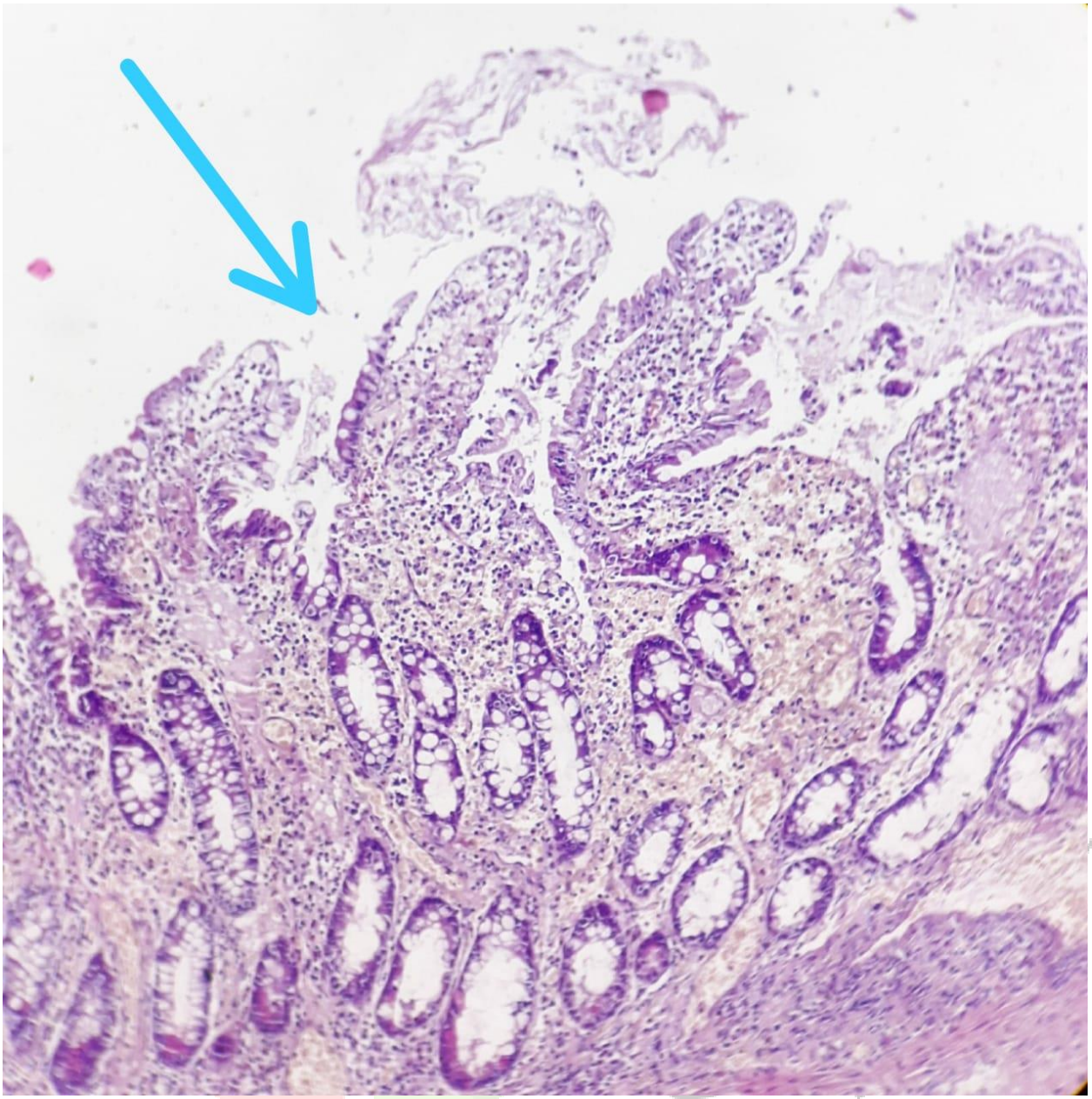

Fig 4 – Focal area of mucosa [arrow] show ulcer formation extending upto submucosal layer

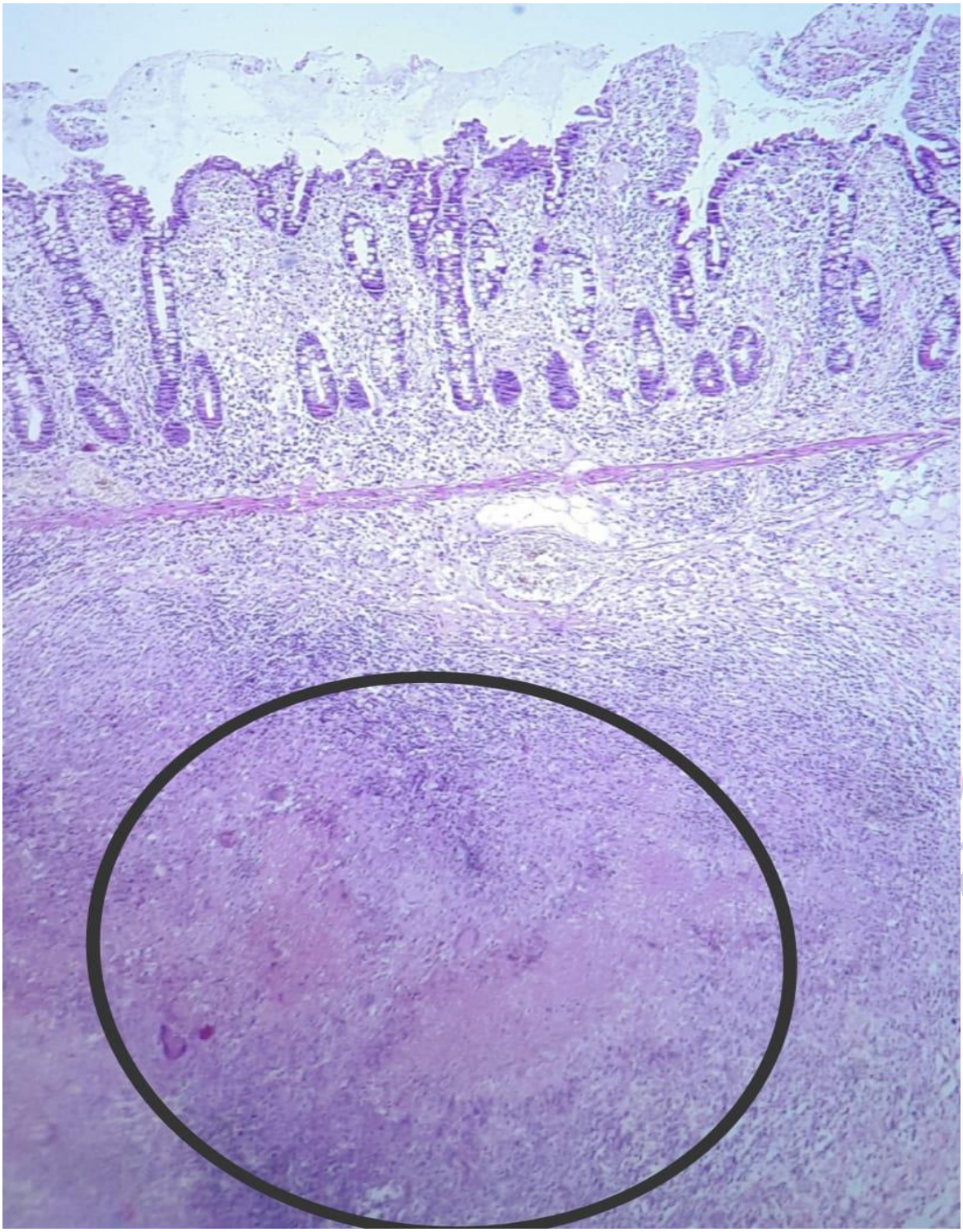

Fig 5 – submucosa shows edema and extensive area of acute inflammatory cells along with area of caseous necrosis, epitheloid cells forming granuloma [circle]

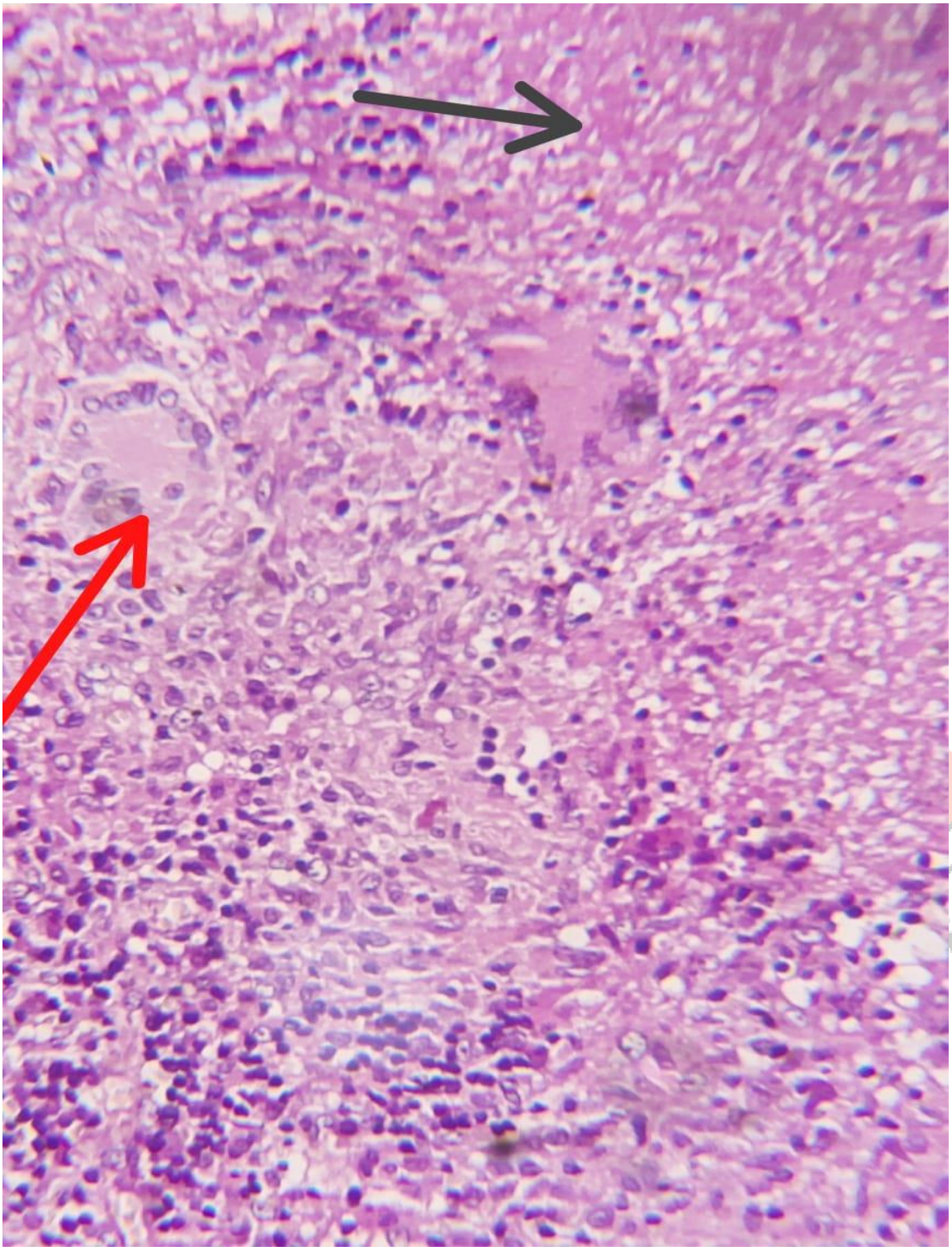

Fig 6 – Shows caseous necrosis [black arrow] and multinucleated giant cells [red arrow]

Discussion

Tuberculous enterocolitis is a disease of young adult (third decade), the most frequently involved segments of bowel are ileocaecal region, the ileum and the colon.[3] The complications of intestinal tuberculosis are bowel obstruction (31.7%), intestinal perforation (4.9%), enterocutaneous fistula (2.4%) and small bowel volvulus due to mesenteric lymphadenitis (2.4%) . Free intestinal perforation is an uncommon complication of intestinal tuberculosis because of reactive thickening of the peritoneum and formation of adhesion with surrounding tissues . It account 1-10% of abdominal tuberculosis cases and it has a poor prognosis with mortality rate higher than 30%. [2]

The intestinal tuberculosis continues to be a frequent problem in many developing countries. S. Talwar et al have found 19% of non-traumatic small bowel perforation in 308 patients were due to intestinal tuberculosis [4]. Badoui et al in Switzerland, also reported eleven cases of intestinal tuberculosis perforation, ten of them were immigrants from countries endemic for tuberculosis. [5] There is a slight male predominance of 60% contrary to other series reporting more females being affected [6] .

Gastrointestinal tuberculosis display a variety of microscopic features and it is often difficult to distinguish GITB from other inflammatory lesions of the intestine. Prachi B Tripathi on gross analysis of 110 GITB patients noted a free intestinal perforation (32.6%) and ischemia (7.3%), in addition to the typical findings of transverse ulcers, strictures, hyperplastic lesions and serosal tubercles. The author also noted a varied morphological form of caseating, noncaseating, confluent, discrete and even suppurative granulomas on histopathology. An important finding was the co-existence of different types of granulomas within the same case. In a significant number of cases (44.5%) granulomas were seen in a sub-mucosal location. The predominant type of inflammation seen in the lamina propria was lympho-plasmacytic in 85.5% cases. The author concluded that pathologists should be aware of the entire spectrum of gross and histopathological features of GITB, so as to avoid misdiagnosis.[7]

Specific diagnostic investigations are not available and no single investigation had a high diagnostic accuracy. Plain X-ray has shown free air in only 25-50%. Fifty per cent of the extra pulmonary tuberculosis patients have normal chest radiography [8-11]. In our patient, erect chest X-ray and abdominal x-ray showed free gas under

diaphragm. In patients with intestinal tuberculosis who presented with generalized peritonitis should have exploratory laparotomy. In equivocal cases computed tomography helps to identify the perforation. Makanjuola has shown that computed tomography can provide a diagnosis of intestinal tuberculosis in 81% of the cases [9,10]. In a series of 79 patients, Wani et al have found that only 29% of patients with non-traumatic perforation of terminal ileum have leucocytosis [12]. Our patient had an elevated white blood cell count.

Perforation is treated by thorough resuscitation followed by resection of the affected segment. Anastomosis is performed, provided it is regarded as safe to do so, when peritoneal contamination is minimal and widespread disease is not encountered; otherwise, as a first stage, resection and exteriorisation is done followed by restoration of bowel continuity as a second stage later on after a full course of antituberculous chemotherapy and improvement in nutritional status.[*Bailey & Love's short practice of surgery , 27th ed. p 81*]

In our patient, perforation was diagnosed with erect chest and abdominal x-ray. HRCT thorax was performed to rule out Covid-19 infection which also picked up free gas in peritoneal cavity but no significant pulmonary pathology. On laparotomy, there was single perforation on antimesenteric border of mid-ileum with gross contamination inside peritoneal cavity. Considering the severe contamination, decision taken to exteriorise as a loop ileostomy instead of resection and anastomosis. Biopsy taken from the edge of perforation which confirmed the diagnosis of tuberculosis. Patient started on anti-tubercular drug with the aim of a second procedure to restore bowel continuity.

Patients with small bowel perforations less than 1 cm underwent primary closure and those with perforations greater than 1 cm required resection and ileostomy. Formation of ileostomy for the tubercular perforation had slightly better outcomes although not statistically significant [13].

Conclusion

Free perforation of primary intestinal tuberculosis is rare. Diagnosis of this acute perforation can be difficult sometimes. In endemic areas like India, clinicians should stay vigilant of this condition as a possible differential in patients presenting with acute or chronic abdominal pain. Prompt diagnosis with proper resuscitation

followed by urgent surgical intervention and continuing medical treatment can decrease the morbidity and mortality.

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