e-ISSN: 0975-1556, p-ISSN:2820-2643

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2022; 14(10); 952-957

Original Research Article

Clinical Presentation and Surgical Management of Koch's Abdomen

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Received: 25-08-2022 / Revised: 25-09-2022 / Accepted: 30-10-2022
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Conflict of interest: Nil

Abstract

Background: Tuberculosis continues to be a global health concern. The principal forms of abdominal TB are intestinal, peritoneal and nodal. The clinical symptoms and signs of abdominal TB are non-specific and diagnosed late when presented with complications.

Aim: To study the various clinical presentations and surgical management of abdominal tuberculosis.

Material and methods: It was a retrospective observational study. The study period was from January 2022 to June 2022. 50 patients with abdominal tuberculosis from Civil Hospital, Ahmedabad were included in the study.

Observation & Results: Of the 50 patients studied, mean age of presentation was 31 years with no gender predisposition. The presenting complaints in the patients were abdominal pain (100%), Nausea and vomiting (84%), abdominal distension (76%) and features of subacute intestinal obstruction (72%). ESR was noted to be elevated in all patients (mean = 54). Erect abdominal x-ray showed multiple air fluid levels in 37(74%) and free air under diaphragm in 6 (12%). CECT is the investigation of choice. 20 out of 50 underwent CECT with common findings being ascites (60%), lymph node enlargement (65%), ileal stricture (25%). 20 patients (40%) were successfully managed conservatively, started AKT and discharged with adequate weight gain at the end of 6months. 30 patients (60%) required operative intervention in the form of adhesiolysis, resection of bowel or stoma formation. Postoperative 3 patients (6%) developed fecal leak with an overall mortality in 6 patients.(12%).

Conclusion: Abdominal tuberculosis continues to be widely prevalent in our society. Management involves judicious combination of antitubercular therapy and surgery which may be required to treat complications such as intestinal obstruction and perforation.

Keywords: Abdominal TB, Subacute intestinal obstruction, Antitubercular therapy

Introduction

Tuberculosis of the abdomen presents in a variety of ways and is a great mimic. It can present as nominal as dull aching abdominal pain to a surgical emergency like intra-abdominal abscess, Acute Intestinal obstruction or Hollow viscus perforation. The abdomen is involved in 10%-30% of patients with pulmonary TB

and accounts for between 5% and 10% of TB notifications in the United Kingdom. In the United States, among native-born white Americans, abdominal TB is primarily a disseminated disease of elderly, debilitated patients with chronic illnesses. Among foreign-born individuals, abdominal TB occurs in the young, immunocompetent patients from endemic areas. [1]

In India though, tuberculosis continues to be a burden on the healthcare system. Though pulmonary and lymph nodal tuberculosis carry the bulk of the burden, abdominal tuberculosis is also frequently diagnosed and managed in the Indian set up. The burden of tuberculosis of indoor patients was 1.3 cases per every 100 patients admitted to the department of gastroenterology, with 2 of the 58 cases requiring surgical intervention as per the study. [2]

The presentation of abdominal tuberculosis is varied, difficult to diagnose either clinically or radiologically, requiring a high index of suspicion and frequently requiring operative intervention for acute emergency presentations, eventual diagnosis being made intra operative. The purpose of this study was to study the disease, its complications, management, the morbidity and mortality associated with it.

Materials and Methods

It was a retrospective study with target samples being confirmed cases of abdominal tuberculosis. The study period was from January 2022 to June 2022. 50 patients with abdominal tuberculosis who presented to the Surgical Emergency at Civil Hospital, Ahmedabad (a tertiary care hospital) were included in the study.

The patient characteristics examined included age, sex, presenting medical complaints and clinical examination. Complete Blood counts, serum biochemistry for renal and liver function and ESR was performed in all patients. Chest X Ray (PA view), Erect Abdominal X Ray (AP view), Ultrasound Abdomen with Pelvis was performed in all patients as standard in patients presenting to the surgical emergency. Patients clinically stable and with unconfirmed diagnosis underwent CECT Abdomen Pelvis, whereas those patients with surgical emergency were taken up for Emergency Laparotomy without further investigations.

A case was defined as a confirmed case of abdominal tuberculosis if it fulfilled one of the following criteria:

1. Microbiological evidence of the presence of AFB in tissue or fluid
2. Presence of caseation necrosis in the tissue specimen
3. Histology showing characteristic granulomas and/or chronic inflammatory infiltrate with epitheloid cells.

A case was considered a clinically diagnosed case when clinical and radiological evidence was strongly in favour of abdominal tuberculosis, in the absence of biochemical or microbiological evidence. Those not responsive to AKT were excluded from this set.

Patients with HIV reactive status were excluded from the study.

Observation and Results

Of the 50 patients studied, mean age of presentation was 31 years (range – 16 years to 55 years) with no gender predisposition (26 male and 24 female). Most patients had poor nourishment status with an average BMI of 19.9 kg/sq m. The presenting abdominal complaints in the patients were abdominal pain (100%), Nausea and vomiting (84%), abdominal distension (76%) and features of subacute intestinal obstruction (72%).Weight loss (56%), Fever (46%), reduced appetite (44%) were other symptoms as part of the presentation.

Complete blood counts and serum biochemistry were essentially normal or

relating to the surgical complication they presented with. ESR was noted to be elevated in all patients (mean = 54). Erect abdominal x-ray showed multiple air fluid levels in 37(74%) and free air under diaphragm in 6 (12%). CECT is the investigation of choice. 20 out of 50 underwent CECT with common findings being lymph node enlargement (65%), ascites (60%), ileal stricture (25%).

In our study, 20 of the 50 cases (40%) were medically managed without the need of operative intervention. They were discharged tolerating full oral diet and taking AKT. On 6 month follow up, patients were doing well with adequate weight gain. However, being a tertiary care centre, most cases were referred here with complications. Thus, the increased number of patients requiring operative intervention in our study (30 out of 50 – 60%).

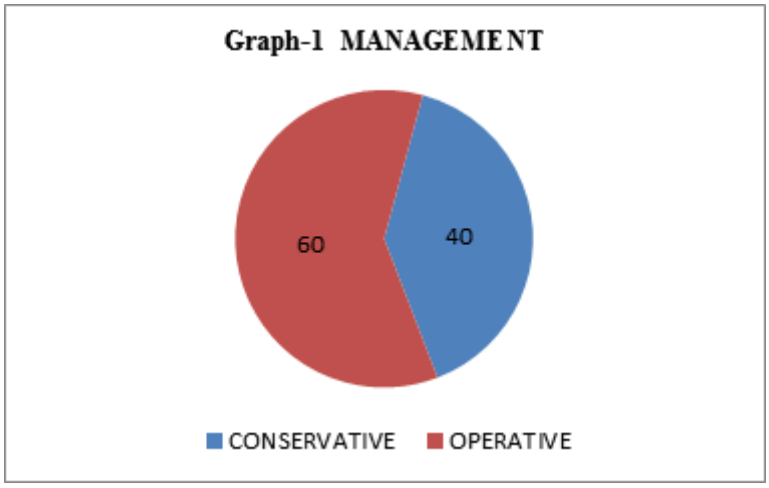
The surgical procedures carried out in these patients included Adhesiolysis in 11 patients (22%), Resection of bowel with Anastomosis in 6 patients (12%), Resection of bowel with stoma formation in 8 patients (16%) and closure with biopsy (without any bowel handling) in 5 patients (10%). 3 patients had postoperative fecal leak as the main complication, 2 of who underwent re-laparotomy. All patients were started IV anti-tubercular therapy initially and switched to oral anti-tubercular therapy before being discharged. Despite the appropriate pre-operative assessment, intra-operative care for minimal bowel handling and supportive postoperative care, 6 patients expired with a mortality of 12%.

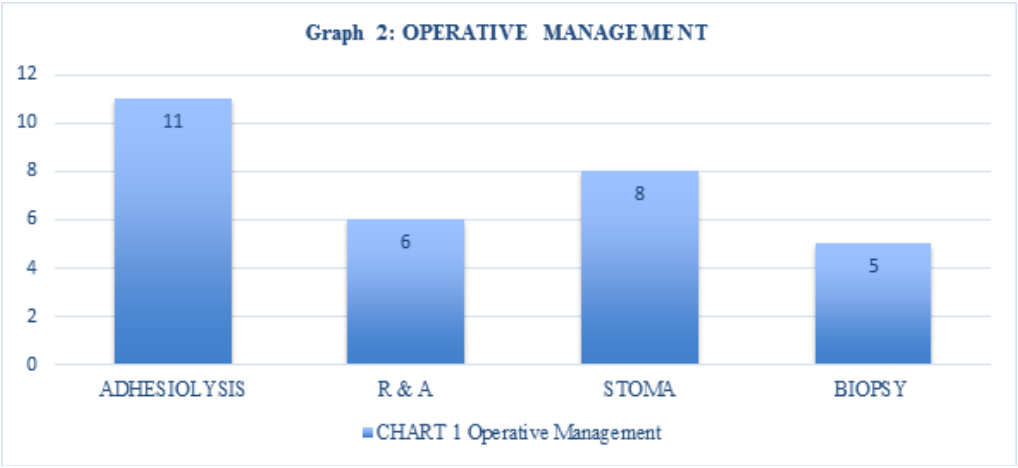
Table 1: Distribution of Symptoms

Symptoms	Percentage
Abdominal pain	100%
Nausea and vomiting	84%
Abdominal distension	76%
Weight loss	56%
Fever	46%
Reduced appetite	44%

Table 2: Investigations

Investigations	Percentage
Raised ESR (CBC)	100%
Multiple air fluid levels (X-ray)	74%
Lymphnode enlargement (CECT)	65%
Ascites (CECT)	60%
Ileal stricture (CECT)	25%
Free air under diaphragm (X-ray)	12%





Discussion

Abdominal tuberculosis is a form of extra pulmonary tuberculosis. It is rare in countries like the US and the UK, but is still highly prevalent in India. Tuberculosis of the abdomen presents in a variety of ways and is a great mimic. It can present as insignificant as dull aching abdominal pain to a surgical emergency like Acute Intestinal obstruction or with Hollow viscus perforation. Symptoms can include abdominal pain, distension, nausea, vomiting, diarrhroea, constipation and bleeding per rectum.

In our study,we noted that all the patients (100%) had abdominal pain as a common complaint. Intensity varied from dull aching pain to severe colicky pain. It was associated with nausea and vomiting in 84% and abdominal distension in 76% of cases, with features of acute/subacute intestinal obstruction with multiple dilated small bowel loops with air fluid levels in 72% cases.

Most laboratory tests are unhelpful. In our study, we noted that ESR was elevated in all patients with a mean of 54mm/hr (range 18-106).The erythrocyte sedimentation rate (ESR) is often moderately raised in 79% of patients, and although there may be a mild normochromic, normocytic anaemia, a leucocytosis is uncommon. Hypoalbuminaemia is not uncommon but liver function tests are usually normal. [3]

As noted in our study, 20 of the 50 patients underwent CECT of the abdomen and pelvis. It was noted that lymph node enlargement was the most common finding (in 65%). Ascites was the next most common finding on CECT (60%), which was moderate in amount with thickened enhanced parietal pleura showing the

peritoneal inflammation associated with Abdominal Tuberculosis. Bowel involvement was noted in a large segment with ileal stricture being the most common feature (25%). Bowel dilatation with features of subacute obstruction, bowel wall thickening and free perforation were other features picked up on CT scans. Neither clinical signs, laboratory, radiological and endoscopic methods nor bacteriological and histopathological findings provide a gold standard by themselves in the diagnosis of abdominal TB. [4]

The clinical awareness is thus primary. Most patients with abdominal TB respond to medical treatment with standard anti-tuberculous chemotherapy and carries good prognosis if promptly diagnosed and treated. Presently, according to National TB Elimination Program, DOTS-Short Course Chemotherapy, the regimen followed is 2 months of intensive therapy which includes daily administration of 4 drugs (Rifampicin, Isoniazid, Pyrizinamide and Ethambutol). It is followed by a continuation phase of 4 months where only 3 drugs are administered (Rifmpicin, Isoniazid and Ethambutol). Inj. Steptomycin is added to the intensive phase in selected cases. The continuation phase may be extended to a period of 7 months depending on clinical status or persistence of residual symptoms. The decision is subjective and rests on the policy of that particular health care facility. [5] Intravenous anti-TB therapy in combination with surgical management may be needed for severe forms of TB with extensive gastrointestinal involvement. In Abdominal Tuberculosis, the mainstay of management is medical in the form of anti-tubercular therapy with supportive care. The surgical team steps in when there are complications, which may be managed conservatively, by minimal invasive techniques or may also need emergency laparotomy at times. Conservative management of tuberculous subacute intestinal obstruction involves hydration, broad spectrum antibiotics, IV anti-TB therapy, insertion of Nasogastric tube for gastric and bowel decompression, prokinetics or laxatives depending. Patient is gradually started orally and once can tolerate liquid diet is switched to oral anti-tubercular therapy. Most patients with subacute intestinal obstruction resolve with this method, but few require active surgical intervention. Surgery is essentially reserved for those with acute surgical complications including free perforation, confined perforation with abscess or fistula, massive bleeding, complete obstruction, or obstruction not responding to medical management. [6,7]

In our study, 20 of the 50 cases (40%) were medically or conservatively managed without the need of operative intervention. They were discharged tolerating full oral diet and taking AKT. On 6 month follow up, patients were doing well with adequate weight gain. However, being a tertiary care centre, most cases were referred here with complications. Thus, the increased number of patients requiring operative intervention in our study (30 out of 50 – 60%). Of the patients, bowel obstruction was the most common indication for Exploratory Laparotomy with free perforation being the other indication.

The surgical procedures carried out at our set up included adhesiolysis in 11 patients, Resection of bowel with Anastomosis in 6 patients, Resection of bowel with stoma formation in 8 patients and closure with biopsy (without any bowel handling) in 5 patients. 3 patients had postoperative fecal leak as the main complication, 2 of who underwent re-laparotomy. All patients were started IV anti-tubercular therapy initially and switched to oral anti-tubercular therapy before being discharged. Despite the appropriate pre-operative assessment, intra-operative care for minimal bowel handling and supportive postoperative care, 6 patients expired with a mortality of 12%. This

corroborates with the findings of Bhansali SK et al, who reported that the high mortality was partly associated with malnutrition, anaemia and hypoalbuminaemia, the mortality being higher (12%-25%) in the presence of acute complication. [8,9]

Conclusion

Abdominal tuberculosis is a common disease with many varied presentations. The burden continues to remain significant in India, despite advance in awareness, short course chemotherapy and government initiatives. Abdominal Tuberculosis can be of various forms like peritoneal tuberculosis, tuberculous lymphadenopathy and intestinal tuberculosis. Neither clinical signs, laboratory, radiological and endoscopic methods nor bacteriological and histopathological findings provide a gold standard by themselves in the diagnosis of abdominal TB. Tuberculosis is a medical condition requiring anti-tuberculous chemotherapy. However, surgical intervention including laparotomy for exploration is frequently needed in the management in view of delayed diagnosis and presentation of patients with surgical emergencies.

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