

Study of Intestinal Obstruction due to Tuberculosis

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Abstract

Background: Tuberculosis has been declared a global emergency by the World Health Organization (WHO) and is the most important communicable disease worldwide. The disease may involve any system of the body but abdomen is one of the commonest sites of involvement after lungs. Though potentially curable, abdominal tuberculosis continues to be a major cause of morbidity and mortality. **Study Design:** The study design is of case series. **Aim of the Study:** To observe the incidence of Tuberculosis among all the cases presenting to the acute surgical care, Osmania General Hospital as intestinal obstruction, various modes of management and outcome among these cases. **Results:** This study was conducted at upgraded department of general surgery, Osmania medical college / general hospital, Hyderabad, Telangana. A retrospective study of 41 patients presenting to the acute surgical care unit of the upgraded department of General Surgery of Osmania General Hospital, Hyderabad, with Intestinal Obstruction due to Tuberculosis, from November 2015 to October 2018. In patients presenting with intestinal obstruction of T.B origin most common presenting complaint is pain abdomen of 3-4 weeks duration at the time of presentation. Among 41 patients, 31 patients were operated. Among 31 patients who were operated, majority of them has mesenteric thickening and mesenteric lymph node enlargement and adhesions. Among the 31 patients who underwent surgery, adhesionolysis was the most common performed procedure. Among the 10 patients with stricture, 5 of them underwent stricturoplasty. Among the 6 patients with an ileo-caecal mass an ileo-transverse bypass procedure was done in 4 of them. **Conclusion:** Bowel obstruction resulting from intestinal tuberculosis is one of the most common abdominal surgical emergencies and contributes significantly to high morbidity and mortality. Young age at presentation, delayed presentation and high morbidity and mortality are among the hallmarks of the disease. A high index of suspicion, proper evaluation and therapeutic trial in suspected patients is essential for an early diagnosis and timely definitive treatment, in order to decrease the morbidity and mortality associated with this disease.

Key words: Bands, Intestinal Obstruction, Burst abdomen

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Introduction

1. Tuberculosis has been declared a global emergency by the World Health Organization (WHO) and is the most important communicable disease worldwide. Approximately one third of the world population is infected and about three millions die each year from this disease [1].

2. It remains the principal cause of death in the developing countries [2], probably due to poverty, lack of education, low detection rate, nonavailability of experienced staff and insufficient coverage of the community by immunization programme.

3. The incidence of tuberculosis' is again on the rise in developed countries, due to the influx of immigrants from third world countries, HIV infection and increasing use of Immunosuppressive therapy [3].

4. The disease may involve any system of the body but abdomen is one of the commonest sites of involvement after lungs [4]. Though potentially curable, abdominal tuberculosis continues to be a major cause of morbidity and mortality. In the abdomen, tuberculosis may affect the gastro-intestinal tract, peritoneum, lymph nodes, and solid viscera.

5. Intestinal tuberculosis has usually one of the three main forms i.e. ulcerative, hypertrophic or ulcerohypertrophic, and fibrous stricturing form [5]. The disease can mimic various gastrointestinal disorders, particularly the inflammatory bowel disease, colonic malignancy, or other gastrointestinal infections [6].

6. Most Patients have a chronic presentation but may present late with complications like sub acute and acute obstruction and sometimes presents with a palpable mass as shown by Anuradha [7] or strictures as shown by Kapoor [8], Ahmed [9] and Gondal [10]. Constitutional Symptoms may or may not be present [8]. Microbial diagnosis is difficult in intestinal TB. Histopathology and radiology is the mainstay of diagnosis.

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7. Most patients with abdominal TB can be treated with anti TB therapy alone but some may require surgery to relieve the obstruction either by stricturoplasty or resection and anastomosis. Patients with acute abdomen require emergency laparotomy. Patients with patent strictures respond to conservative management and patients with intestinal obstruction, strictures or mass usually require

Methodology

Inclusion criteria

The patients have been selected from all age groups.

The main inclusion criteria being the histopathological positivity of the specimen for tuberculosis.

Exclusion criteria

All cases of TB Peritonitis, Perforation due to TB have been excluded.

A retrospective study of 41 patients presenting to the acute surgical care unit of the upgraded department of General Surgery of Osmania General Hospital, Hyderabad, with Intestinal Obstruction due to Tuberculosis, from November 2015 to October 2018.

All the patients have been subjected to preliminary investigations:

- Hemogram
- Chest X-ray PA view
- Erect abdominal X-ray
- Ultrasonogram of abdomen
- Sputum examination for AFB

- Mantoux test
- The various clinical presentations have been analysed and studied.
- The patient was managed according to the mode of presentation,
 1. Acute intestinal obstruction
 2. Sub-acute intestinal obstruction
- Colonoscopy was done for all the patients planned for conservative management.
- All the patients were given ATT post operatively

Results

The study was done retrospectively for a period of 3 years from 2015 – 018 in all surgical units in Osmania General Hospital, Hyderabad, Telangana, India, with intestinal obstruction. Among a total of 296 patients presenting with intestinal obstruction, tuberculosis was identified as the cause in 41 patients

Gender: Of the 41 patients in the study, 22 were males and 19 were females.

Age: In the study incidence is higher in 21-30 years age group.

Mode of presentation: Among 41 patients in the study 24 patients presented with acute intestinal obstruction whereas 17 presented with sub acute intestinal obstruction.

Presenting complaints (Symptomatology): In the present study, the most common complaints at the time of presentation were pain abdomen, vomiting, constipation and distension. The others being constitutional symptoms.

Table 1: presenting complaints (symptomatology)

S.No	Complaint	No. of Patients	Percentage
1	Pain abdomen	41	100%
2	Distension	28	68.2 %
3	Vomiting	37	90.2 %
4	Constipation	32	78.0 %
5	Fever	24	58.53 %
6	Weight loss	33	80.48 %
7	Cough	16	39.02 %
8	Night sweats	6	14.6%
9	Fatigue	19	46.34%
10	Diarrhea	3	7.31 %
11	Hemoptysis	0	0%

Signs at the time of presentation: Among 41 patients, Right iliac fossa tenderness present in 11 patients, Generalised tenderness in 18 patients. Tenderness is absent in 12 patients.

Duration of pain

The majority of our patients had symptoms of 3-4 weeks duration at the time of presentation. The reasons for late presentation in this study may be attributed to the fact that the diagnosis of intestinal TB in its initial stages is usually difficult due to vague and non-specific symptoms as a result patients remain undiagnosed for prolong periods, receiving symptomatic treatment and subsequently present late with complications such acute or sub-acute intestinal obstruction.

Past history of tuberculosis

Among 41 patients, 12 patients were known case of tuberculosis and were on ATT

X-RAY findings

In the present study, 12 patients (29.26 %) had a past history of tuberculosis and had used ATT. Among the 41 patients, 17 patients had lesions in the X-ray chest and included all the 12 patients with past h/o TB. The other 5 patients had pleural effusion (2) and consolidation (3). Erect abdomen X-ray in 33 patients (80.5 %) showed air fluid levels and in 7 patients (17.07 %) showed dilated bowel loops.

Table 2: X-RAY Findings

CHEST X-RAY		ERECT ABDOMEN	
Changes	No. of Pt.	Changes	No. of Pt.
Consolidation	4	Air fluid levels	33
Infiltrates	4	Dilated bowel loop	7
Cavity	5		
Effusion	4	Normal	1
Normal	24		

Management

In the present study, out of 41 patients, 24 patients (58.5 %) of the patients were operated within 24 hrs of admission. The remaining 17 patients were put on conservative management initially but 7 patients (17.1 %) had to undergo elective surgery as their symptoms were not

subsiding. But 10 patients (24.39 %) had relief with conservative management.

Intraoperative findings

In the present study, among the 31 patients who were operated, majority of them had mesenteric thickening and mesenteric lymph

nodal enlargement (80.64 %), and adhesions (70.96 %). Most of the patients had more than one of the above mentioned findings. The probability of finding adhesions was significantly higher in patients

presenting with acute intestinal obstruction than in those presenting with sub-acute intestinal obstruction.

Table 3: Intraoperative Findings

S.No	Findings	Patients	Percentage
1	Adhesions	22	70.96 %
2	Strictures	10	32.25 %
3	Tubercles	9	29.03 %
4	Mes. Thickening	25	80.64 %
5	Lymph nodes	25	80.64 %
6	Ileo-caecal mass	6	19.34%
7	Fluid	15	48.38 %

Adhesions

In the present study, out of 22 patients with adhesions the associations are as mentioned and only 1 patient had exclusively adhesions. In the other 19 patients without adhesions, 10 patients were managed conservatively and in the remaining 9 patients, 6 of them had strictures, all of them in the ileum and other 3 patients had an ileo-caecal mass.

Table 4: Adhesions

S.No	Adhesions associated with	Patients	Percentage
1	Stricture	4	18.18%
2	Mesenteric thickening	16	72.72 %
3	Lymph nodes	19	86.36 %
4	Tubercles	9	40.9 %
5	Ileo-caecal mass	3	13.6%
6	Gangrene	3	13.6%
7	Volvulus	0	0%

Operative procedures

In the present study, among the 31 patients who underwent surgery, adhesionolysis was the most commonly performed procedure. Among the 10 patients with strictures, 5 of them underwent stricturoplasty. Among the 6 patients with an ileo-caecal mass an ileo-transverse bypass procedure was done in 4 of them.

Table 5: Operative Procedures

S.No	Procedure	Patients	Percentage
1	Adhesionolysis	14	45.16%
2	Stricturoplasty	5	16.12%
3	Resection with end-to-end anastomosis	7	22.58 %
4	Resection with end ileostomy	1	3.22%
5	Ileo-transverse anastomosis	4	12.90%
6	Rt. Hemicolectomy with ileostomy	2	6.45 %

Resections

Among the 10 patients who underwent resections, in 5 of them it was due to strictures, in 3 of them due to gangrenous bowel and in 2 of them due to densely adherent and gangrenous ileo-caecal mass.

Anastomosis

In all the 10 patients who underwent resections, an end-to-end entero-enteric or entero-colic anastomosis was performed in 7 of them, where as in 3 patients an end ileostomy had to be done. In 4 patients with an ileo caecal mass an ileo- transverse bypass procedure has been performed.

Post operative complications

In the present study, post-operative complications were seen in 51.61 % of operated cases. Wound infection was most commonly seen in 11 patients (68.75 %). The complications were significantly higher in those patients who presented late and with associated comorbidities

Hospital stay

In the present study, most of the patients were discharged during the 2nd week (45.2 %) and most of them discharged in the 1st week were managed conservatively.

Mortality

In the present study, only 1(2.43 %) patient died in the immediate postoperative period due to fecal peritonitis and septic shock.

Discussion

Tuberculosis as the cause of bowel obstruction

In the present study, the underlying cause of bowel obstruction was tuberculosis in 14% of patients

Age incidence

Intestinal tuberculosis, like tuberculosis elsewhere in the body affects the young people at the peak of their productive life. This fact is reflected in my study as the highest incidence of the patients was in the 2nd and 3rd decades of life and more than 75% of the patients were aged below 40 yrs. The presentation of tuberculous intestinal obstruction in this age group has serious impacts on the national economy and production, as working and productive class of community is replaced by sick and ill individuals.

Sex incidence

The study showed that males were slightly more affected than females with a male to female ratio of 1.15:1 which is comparable to other studies [11,12]

Symptomatology

The clinical presentation of tuberculous intestinal obstruction in our patients is not different from those in other studies [11,13] with abdominal pain being common to all the patients. The clinical presentation of abdominal TB is usually non-specific and, therefore, often results in diagnostic delay and hence the development of complications such as intestinal obstruction.

Past history of tuberculosis

In our study, associated pulmonary tuberculosis was found in 29.2% of cases.

Management

Table 6:Management

S.No	Management	Present study
1	Emergency	58.5 %
2	Elective	17.1 %
3	Conservative	24.3 %

Operative findings

Table 7:Operative findings and present study

S.No	Operative findings	Present study
1	Small bowel strictures	32.25 %
2	Bands/ adhesions	70.96 %
3	Ileo-caecal mass	19.34%
4	Mes. lymph nodes	80.64 %

In our study, adhesions and bands were the major findings.

As far as the site of pathology is concerned, it was terminal ileum followed by closely followed by the ileo-caecal region. This is possibly because of the increased physiological stasis, increased rate of fluid and electrolyte absorption, minimal digestive activity and an abundance of lymphoid tissue at this site. The frequency of bowel involvement declines as one proceeds both proximally and distally from the ileocaecal region.

Surgical procedure

Table 8:Procedure and present study

S.No	Procedure	Present study
1	Adhesionolysis	45.16%
2	Strictureplasty	16.12%
3	Resection with end to end anastomosis	22.58 %
4	Ileostomy	9.67 %
5	Right hemicolectomy	6.45 %

In our study, adhesionolysis was the most performed procedure.

Conclusion

Bowel obstruction resulting from intestinal tuberculosis is one of the most common abdominal surgical emergencies and contributes significantly to high morbidity and mortality.

Young age at presentation, delayed presentation and high morbidity and mortality are among the hallmarks of the disease.

A high index of suspicion, proper evaluation and therapeutic trial in suspected patients is essential for an early diagnosis and timely definitive treatment, in order to decrease the morbidity and mortality associated with this disease.

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