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Research Article

Acute Presentation and Management of Abdominal Tuberculosis at A Tertiary Care Centre

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Abstract

Background: Abdominal tuberculosis is the most common extra-pulmonary site affected by the diseases. Diagnosis of ABTB require a high index of suspicion because of its vague initial clinical presentation and absence of any diagnostic test. This study was conducted to describe the clinico-pathological profile and the outcome of the patients with acute tuberculous abdomen presenting to emergency department of our hospital.

Material and Methods: This was a retrospective study conducted on 164 cases of abdominal tuberculosis presenting as acute abdomen at JN Medical College and Hospital, AMU, Aligarh from Jan 2013 – Dec 2015.

Results: In this study females (90) outnumbered males (74) with female to male ratio of 1.2:1. Most common clinical presentation was intestinal obstruction (n=113, 69%) {subacute – 68 (41.5%); acute – 45 (27.4%)}. The disease mostly involved the ileum (53.8%) then ileo-caecal region, jejunum, colon and pylorus. Intestinal perforation (33.8%) was most common primary operative finding and closure of perforation with proximalmileostomy was the most common surgical procedure done. The overall complication rate was 33.5% with pulmonary complications being most common (38.8%). The overall mortality rate was 9.8% among surgically treated patients.

Conclusion: Acute presentation of abdominal tuberculosis was predominantly seen in younger population (3rd decade) especially among females. Intestinal obstruction was the most common emergency presentation of the disease and the disease in its acute form had a very high morbidity and mortality.

Introduction

Tuberculosis (TB) has been declared a global emergency by the World Health Organization (WHO) and is the most important communicable disease worldwide. It continues to be prevalent in the underdeveloped and developing third world countries and its prevalence is increasing in the developed world too, due to the factors such as ageing population, alcoholism, trans-global immigration and immunocompromised conditions most importantly HIV/AIDS [1]. Tuberculosis can affect any part of the body. Lungs are most commonly affected organ and abdomen is the next common site accounting for 11-16% of extra-pulmonary tuberculosis cases. The abdomen, it may affect gastro-intestinal tract, peritoneum, mesenteric lymph nodes and solid viscera [2]. The primary gastro-intestinal tract TB is result of hematogenous spread from a pulmonary focus acquired during primary infection in childhood. Other possible mechanisms are ingestion of bacilli from active pulmonary focus, hematogenous spread or direct extension from other affected organ like fallopian tube in females [1].

Diagnosis of ABTB require a high index of suspicion because of its vague initial clinical presentation and absence of any diagnostic test [3]. Moreover, ABTB with acute abdomen is yet more challenging to the surgeons in developing countries like our center because of the late presentation of the patients coupled with their ignorance, illiteracy, poverty, malnutrition and lack of modern diagnostic and therapeutic options. A surgeon has to rely on his clinical judgment before planning surgical option in a physiologically compromised patient's in the emergency department. He has to collect pathological tissue for histopathology and microbiology to overcome the diagnostic dilemma. It has to be remembered that emergency surgery may overcome the temporary crisis of acute tuberculous abdomen but the anti-tubercular therapy has to be provided in order to achieve the permanent cure [4].

This study was conducted to describe the clinico-pathological profile and the outcome of the patients with acute tuberculous abdomen presenting to emergency department of our hospital and to compare with what is described in literature.

Methods

A retrospective study was conducted at JN Medical College and Hospital, AMU, Aligarh from Jan 2013 – Dec 2015. 164 cases of abdominal tuberculosis as acute abdomen were identified from records. Data on patient's demographic profile, clinical presentation, investigations (CBC, ESR, RFT, Mantoux test, Chest-Xray, USG-Abdomen, CT-Abdomen), treatment and outcome were abstracted. The diagnosis was based either on histopathological findings or clinical suspicion, laboratory reports, operative findings and response to anti-tubercular therapy.

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Result

Of 164 patients, females (90) outnumbered males (74) with female to male ratio of 1.2:1. The age of the patients ranged from 14 years to 80 years with mean age of 29.2 ± 13.7 years. Most of the patients were in the 20-30 years' age group (Table 1). Most common clinical presentation was intestinal obstruction (n=113, 69%) {subacute – 68 (41.5%); acute – 45 (27.4%)}, followed by perforation peritonitis, 33 (20.1%) and chronic pain abdomen 18 (11%) (Figure 1). Fifteen patients (9.1%) had past history of anti-tubercular therapy for pulmonary tuberculosis and 4 (2.4%) patients had active pulmonary tuberculosis at the time of admission. History of contact with a case of pulmonary tuberculosis was present in 10 (6.1%) patients. Majority of patients (145, 88.4%) had primary abdominal tuberculosis while in remaining 19 (11.6%) patients, the disease was secondary to pulmonary TB.

80 (49%) patients required surgical intervention in the form of emergency laparotomy. The mean presentation from the onset of symptoms was 3±1.1 days. Intestinal perforation (33.8%) was most common primary operative finding followed by bands/adhesion, strictures and ileocecal mass (Image 1). One of the patient had gastric outlet obstruction in the form of pyloric stenosis. Enlarged mesenteric lymphnodes were seen in 85% cases (Table 2).

The disease mostly involved the ileum (53.8%) then ileo-caecal region, jejunum, colon and pylorus (Table 3).

The surgical procedure involved resection of the diseased segment and restoration of the intestinal continuity (primary anastomosis), creation of stoma (ileostomy), stricturoplasty, repair of perforation with/without proximal ileostomy or release of obstructing bands (Table 4).

The overall complication rate was 33.5%. The most common post-operative complication was pulmonary complications (38.8%) in the form of pleural effusion, atelectasis or pneumonia. The other complications noted were wound infection, renal failure, stoma related complication and multiorgan failure (Figure 2).

Of those who were managed conservatively (86 patients), 79% presented with features of SAIO while 21% had history of chronic pain in abdomen and 15 (17.4%) patients had ileo-cecal lump on clinical examination. On radiological examination, most of them had thickening of terminal ileum or ileo-caecal lump (48.8%) with associated enlarged mesenteric lymphnodes in 38.4% cases (Table 5).

The overall mortality rate was 9.8% (n=16). The mortality observed among surgically treated patients was 17.5% (n=14). Thirteen patients died in the immediate post-operative period (within 1st week), single patient died in 3rd week. The cause of death among

Table 1: Age-group and gender wise distribution of cases.

Age-group (years)	Males	Females	Total
10 – 20	19	26	45 (27.4%)
20 – 30	22	32	54 (32.9%)
30 – 40	12	16	28 (17.1%)
40 – 50	07	06	13 (7.9%)
50 – 60	12	07	19 (11.6%)
> 60	02	03	05 (3.0%)
Total	74	90	164 (100.0%)

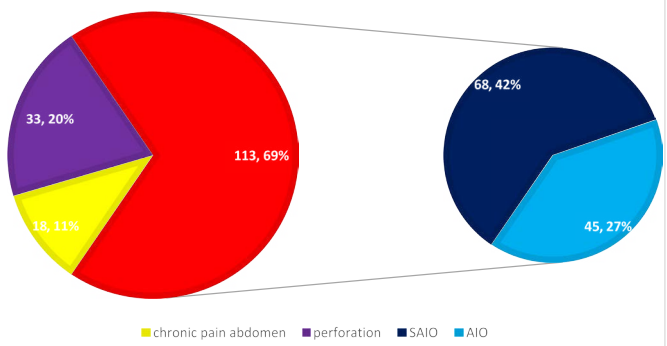

Figure 1: Pie chart showing clinical presentations of patients.

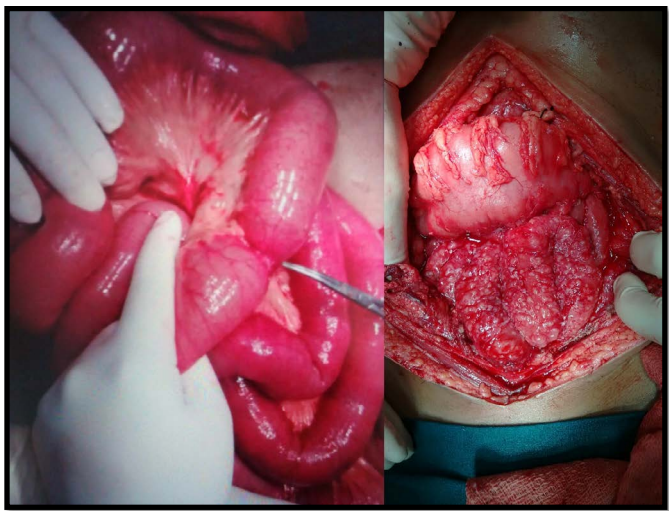

Image 1: Per-operative photographs showing structure of ileum (left) and multiple tubercles over bowel surface (right).

Table 2: Distribution according to the pathological findings in emergency laparotomy.

Operative findings	Number of cases	Percentage
Band/Adhesion	20	25
Intestinal stricture(s)	18	22.5
Intestinal perforation	27	33.8
Perforation with distal stricture	7	8.8
Ileocaecal lump	10	12.5
Abdominal caccoon	5	6.3
Pyeloric stenosis	1	1.25
Enlarged mesenteric LN	68	85
Ascites	30	37.5
Caseation/Tubercle	3	3.8

Table 3: Distribution according to the involvement of region.

Region involved	Number of cases	Percentage
Ileum	43	53.8
Jejunum	10	12.5
Ileo-caecal junction	19	23.7
Colon	4	05.0
Duodenum/pylorus	1	1.25
Peritoneum	3	3.8
Mesenteric LN	68	85

Table 4: Distribution according to the surgical procedure performed.

Operative procedure	Number of cases	Percentage
Release of band/ Adhesiolysis	21	26.3
Resection and anastomosis	6	7.5
RA with proximal ileostomy	13	16.3
Closure of perforation with proximal ileostomy	31	38.8
Limited Rt. Hemicolectomy with ileostomy	10	12.5
Stricturoplasty	5	6.3
LN biopsy	21	26.3
Gastrojejunostomy	1	1.25

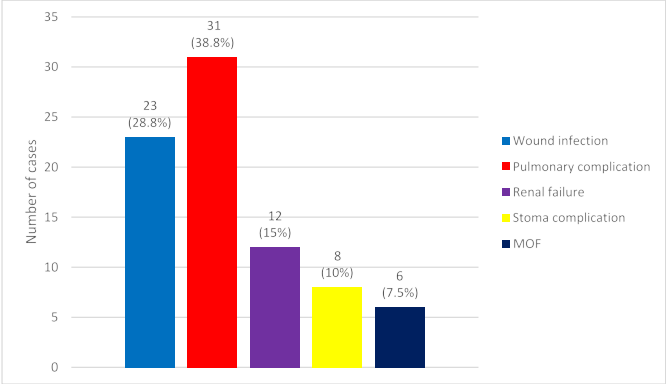

Figure 2: Bar chart showing distribution of post-operative complications.

Table 5: Radiological findings among conservatively managed patients.

CT/USG Abd findings	Number of cases	Percentage
Ileo-caecal lump/ thickening of terminal ileum	42	48.8
Conglomerated bowel loops	14	16.3
Enlarged mesenteric LN	33	38.4
Ascites/ loculated collection	21	24.4

these patients was pulmonary complication (n=6) and multi-organ failure (n=6) followed by stoma related complication leading to poor nutrition (n=1). Among those who were managed conservatively, 2 patients died due to their associated pulmonary tuberculosis causing respiratory failure.

The mean hospital stay of those who were operated was 12 days ± 6 days, while those who were managed conservatively had 5 days ± 3 days.

Discussion

The abdominal tuberculosis (ABTB) constitutes 11-16% of extra-pulmonary tuberculosis cases and is a significant cause of morbidity and mortality [2]. This study was conducted to describe the clinic-pathological profile and the outcome of the patients with acute tuberculous abdomen presenting to emergency department of our hospital. A total of 164 patients were included in this study.

Gender distribution

In this study females (54.9%) outnumbered males (45.1%). The female to male ratio was 1.2:1, suggesting a higher incidence of acute presentation of abdominal tuberculosis among females. This type of female preponderance was also observed by other authors. Mukhopadhyay et al, [4] observed a female to male ratio of 1.6:1. A study by Das et al, [5] also showed a higher female to male ratio (2.6:1). However other studies have reported maximum occurrence in males.

Age distribution

The mean age of the patients in this study was 29.2 ± 13.7 years. Most of the patients (32.9%) were in the age group of 20-30 years. This study is comparatively similar to the study by Urabinahatti et al, [6] who also found maximum number of patients in the 20-30 years age group. Sharma also found a higher incidence of disease in the age group 20-40 years [7]. Shetty G, [8] also reported the incidence of disease among age group 21-30, 31-40 and 41-50 years being 36.8%, 21.1% and 10.5%, respectively.

Clinical presentation

In this study, we found that the most common clinical presentation in emergency was intestinal obstruction (n=113, 69%) {subacute – 68 (41.5%); acute – 45 (27.4%)}, followed by perforation peritonitis, 33 (20.1%) and chronic pain abdomen 18 (11%). Mukhopadhyay et al, [4] also found intestinal obstruction (47.1%) being the most common presentation in emergency department followed by perforation peritonitis (31.4%) and chronic pain abdomen (11.4%). Such resemblance has also been reported by others [9]. However, a study by Jaskani S et al, [3] reported a higher frequency of perforation peritonitis (54.7%) followed by intestinal obstruction (43.5%) and abdominal mass (1.9%).

Association with pulmonary tuberculosis

In this study, we found that 11.5% patients had pulmonary tuberculosis with 2.4 patiens having active pulmonary tuberculosis and 901% patients had past history of pulmonary tuberculosis. Urabinahatti et al, [6] in their study found that 22.5% patients had pulmonary tuberculosis with active pulmonary tuberculosis in 5% and past history of pulmonary tuberculosis in 17.5%. A higher association of pulmonary tuberculosis has also been seen by Charokar K et al, [9] who have reported that a past history of treatment for the pulmonary tuberculosis was present in 15 patients (20.8%).

Majority of patients in our study (145, 88.4%) had primary abdominal tuberculosis while in remaining 19 (11.6%) patients, the disease was secondary to pulmonary TB. Similar findings have also been reported by Jaskani S et al, [3] who have found that 80.7% had primary abdominal TB while associated Pulmonary TB was present in 19.3% patients only. Charokar K et al, [9] have also found a higher incidence (79%) of primary abdominal tuberculosis in their study.

Per-operative findings and region involved

In this study 80 patients underwent emergency laparotomy and preoperatively single or multiple intestinal perforation (33.8%) was the most common finding observed, intestinal perforation with distal stricture was present in 8.8% cases. Similar observations were also made by Charokar K et al, [9] who have reported 33.3% incidence of intestinal perforation in their study. Jaskani S et al, [3] have also reported a higher incidence of intestinal perforation (36.6%) and a lower incidence of perforation with distal stricture (5.0%). On the other hand, Mukhopadhyay et al, and Urabinahatti et al, [4,6] have reported a much lower incidence of intestinal perforation (12.5% and 18.2%, respectively) and much higher incidence of perforation with distal stricture (14.1% and 31.8%, respectively).

We found the incidence of intestinal stricture and ileo-cecal lump was 22.5% and 12.5%, respectively. These findings are in comparison with the findings of Urabinahatti et al, [6] who observed the incidence of intestinal stricture to be 22.7% and that of ileo-cecal lump to be 13.6%, in their study. Charokar K et al, [9] have reported a bit higher incidence of stricture and ileo-cecal mass (29% and 19.4%, respectively) in their study.

Our study showed the presence of band adhesion in 25% cases and that of abdominal cocoon was in 6.3% cases. Charokar K et al have also found the incidence of band and adhesion in 25% patients, however the incidence of abdominal cocoon was 8.3%, which higher than in our study [9]. Mukhopadhyay et al, have reported a lower incidence (4.7%) of abdominal cocoon [4].

85% of our patients who underwent laparotomy have associated multiple enlarged mesenteric lymphnodes. 37.5% cases had associated ascites and multiple peritoneal tubercules with caseations were seen in 3.8% cases. These findings are not in agreement with the observations made by other authors. Charokar K et al have found enlarged mesenteric lymphnodes in only 15.2% patients [9].

In our study ileum (53.8%) was found to be the most common site in the involvement of intestinal tuberculosis followed by ileo-cecal junction (23.7%). Similar picture was also observed in those patients

who were managed conservatively. The literature also suggests ileum and IC junction to be the most common site of intestinal tuberculosis [1,10].

Operative procedure performed

We performed ileostomy alone in 38.8% cases of perforation peritonitis and resection and anastomosis of the diseased segment with proximal ileostomy in 16.3% cases of perforation. Other authors have performed this procedure in very few patients [Mukhopadhyay et al (4.7%), Urabinahatti et al (4.5%)] [4,6]. This differences could be because patients presenting to the emergency department at our centre were either nutritionally compromised or they had a late presentation, primary anastomosis of the gut was not favorable in most of these cases. We performed limited right hemicolectomy in 12.5% of patients which is much lower than performed by other authors. This could be because of the lower incidence of colonic disease in our patients. Adhesiolysis and stricturoplasty were performed in 26.3% and 6.3%, respectively in our patients. This is in agreement with the study of other authors.

Post-operative complications and mortality

We found a post-operative complication rate of 33.5% in our patients and pulmonary complication (38.8%) was the most common complication followed by wound infection (28.8%). Charokar K et al have also reported 33.3% complication rate in their study [9]. Also, the result of various other studies showed pulmonary complications and wound infections to be the most common complications [4,9].

The post-operative mortality was 17.5% in our study. Jaskani S et al, have also found a higher mortality (44.7%) in their study [3]. However various other authors have seen a much lower mortality rate in their study [4,6,9]. High mortality rate in the present study was partly explained by high percentage of acute presentation of our patients in emergency department and a larger percentage of delayed presentation.

Conclusion

Acute presentation of abdominal tuberculosis was predominantly seen in younger population (3rd decade) especially among females. Most of them had primary ABTB. Intestinal obstruction was the most common emergency presentation of the disease. In majority of cases ileostomy was constructed owing to the diseased bowel, poor nutritional status and delayed presentation of the patients. The disease in its acute form had a very high morbidity and mortality.

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