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A Study of Clinical Profile and Management of Abdominal Tuberculosis

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ABSTRACT
The incidence of abdominal tuberculosis has become a rare entity in the west but it is fairly common disease and is responsible for considerable morbidity and mortality in India. To study clinical profile and management of abdominal tuberculosis. This retrospective and prospective study was conducted on 100 patients of abdominal tuberculosis admitted in various surgical wards of the department of surgery associated group of hospitals, Dr. S.N. Medical College, Jodhpur, over a period extending from 10th October 2013 to 30th June 2016. Results: The mean age was 33.8 yrs. Male female ratio is 1:1.12. Pain abdomen was the commonest symptom seen in all patients, maximum presented with in a week. 10% of the patients had active pulmonary TB. Mesenteric lymph nodes (82%) happened to be the commonest site of disease, 10% cases had resection anastomosis. Recurrent obstruction was noted in 9% of operated cases. Conclusion: Abdominal tuberculosis is not an uncommon disease affecting young adults of both sexes belonging to low socioeconomic status in the most productive years of their lives and requires a high index of suspicion for diagnosis.

INTRODUCTION

In India the prevalence of disease is very high and it is about four per thousand populations and mortality rates various from 60-80 per lac population every years[1]. The incidence of abdominal tuberculosis has become a rare entity in the west but it is fairly common disease and is responsible for considerable morbidity and mortality in India. The precipitating factors are over-crowding, malnutrition, poor hygiene and illiteracy. The diagnosis of abdominal tuberculosis is often obscured by the symptoms and signs which are often quite vague with unhelpful laboratory and radiological findings. Abdominal tuberculosis can affect any part of gastrointestinal tract, peritoneum, lymph nodes or solid viscera, constituting up to 12% of extra pulmonary TB and 1-3% of the total[2].

In the pre-antibiotic era, by passing of the stenosed segments was done either in the form, the enteroenterostomy or ileo-transverse colostomy. Seeing the bad results then came an era of treating tuberculosis in a more radical fashion either by doing right hemicolectomy alone or along with removal of the lymphnodes up to the origin of the colic branches of the superior mesenteric artery[3]. Since the advent of newer anti-tubercular drug chemotherapy alone may cure the disease unless patient develops obstructive symptoms. Only minimal surgery to combat the mechanical block and to suture the perforation has been prove adequate. Thus we had done this study to assess clinic-epidemiological profile of abdominal TB.

Aim: To study clinical profile and management of abdominal tuberculosis.

MATERIALS AND METHODS

This retrospective and prospective study was conducted on 100 patients of abdominal tuberculosis admitted in various surgical wards of the department of surgery associated group of hospitals, Dr. S.N. Medical College, Jodhpur, over a period extending from 10th October 2013 to 30th June 2016. Patients already operated for abdominal tuberculosis in the past and were labelled as cured and patients under 11years were excluded from study. Detailed history and physical examination of all cases was done, Details of management were personally recorded and patients attended. All data were entered in excel sheet and analysed using Epi info software of CDC.

RESULTS AND DISCUSSIONS

More than half of the patients (58%) were between 21-40 years of age. The mean age was 33.8 years. Male female ratio is 1:1.12 which shows a slight female preponderance. Disease is more common in low socioeconomic group (60%) (Table 1).

Table 1: Sociodemography

Age (years)	No. of patients	Percentage
11-20	15	15
21-30	34	34
31-40	24	24
41-50	12	12
51-60	7	7
61-70	6	6
>70	2	2
SEX		
Male	47	47
Female	53	53

Table 2: Clinical presentation

Symptoms	No. of patients	Percentage
Pain abdomen	100	100
Vomiting	40	40
Abdominal distension	50	50
Lump abdomen	18	18
Altered bowel habits	35	35
Loss of weight	50	50
Loss of appetite	80	80
Fever	30	30
Cough	12	12
Signs		
Abdominal distension	50	50
Tenderness	40	40
Guarding	12	12
Rigidity	12	12
Lump abdomen	18	18
Visible peristalsis	20	20
No significant abnormality	20	20
Presentation		
Obstruction (acute or sub acute)	50	50
Chronic pain abdomen with altered bowel habits	20	20
Abdominal lump	18	18
Perforation	12	12

Pain abdomen was the commonest symptom seen in all patients, followed by loss of appetite (80%). Other symptoms were loss of weight (50%), abdominal distension (50%), vomiting (40%) and altered bowel habits (35%). Fever was present in 30% of the patients. Abdominal distension was seen in 50% of the patient followed by tenderness in 40%. Guarding was present in 12% while 18% of the cases had lump abdomen. In 20% of patients, no finding could be elicited and presented with chronic pain abdomen alone.

Half of the patients presented with obstruction (acute or sub acute). 20% of the patients presented with symptoms of pain abdomen with altered bowel habits. 18% had abdominal lump while 12% of patients reported with perforation peritonitis (Table 2).

Maximum duration of symptoms was 6 years. Most of the patients (44%) reported between 49 hrs to 7 days of the onset of symptoms. Mean ESR value was 52.8 mm/hrs in this study (Fig. 1).

Pulmonary tuberculosis was associated with tubercular abdomen in 10% of the patients. 4% had active lesion. X-ray FPA abdomen standing position was done in all patients. 28% of the patients had dilated bowel loops whereas 22% showed multiple air fluid levels suggestive of intestinal obstruction. X-Rays of 12% of the patients had gas under the diaphragm implying hollow viscus perforation.

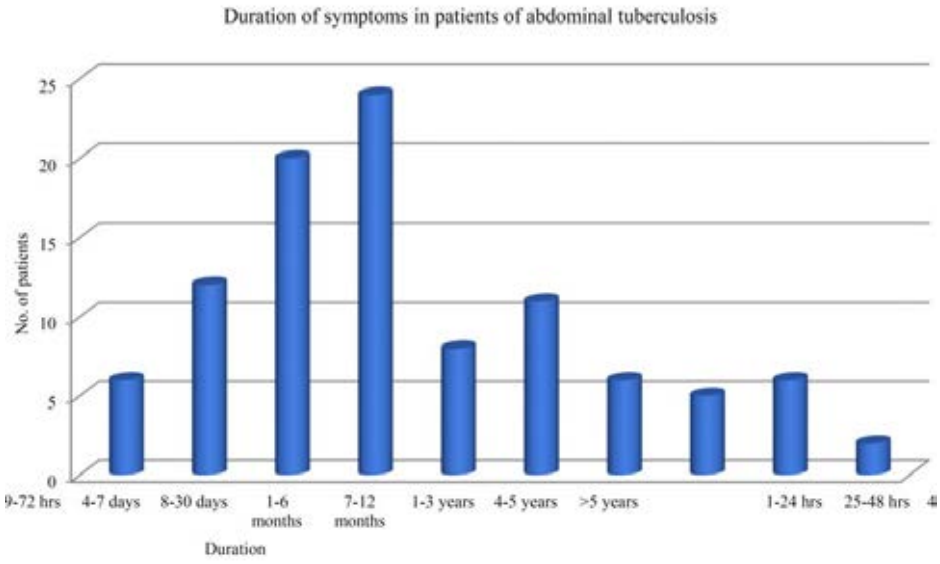

Fig. 1: Duration of symptoms

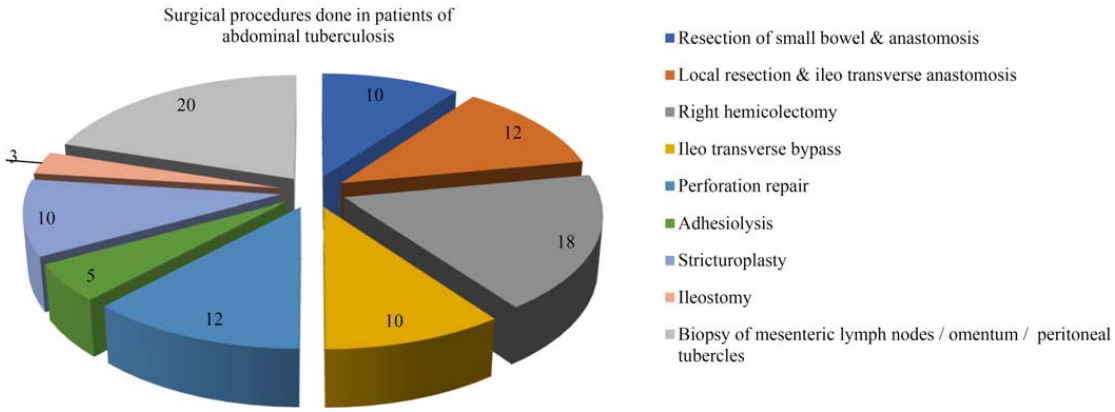

Fig. 2: Surgical Management

Ultrasonology abdomen and pelvis was done in 88 patients. Mesenteric lympahadenopathy in 66% most common, ascitis in 45%, dilated bowel loops, thickened ileocaecal junction, Ileocaecal mass 56, 32 and 21% respectively.

Forty patients were diagnosed as having abdominal tuberculosis by CECT scan abdomen. Barium meal follow through and barium enema were done selectively in patients posted for elective surgery. Pulled up (70%) and contracted caecum (40%) were the most frequent findings (Table 3).

Mesenteric lymph nodes (82%) happened to be the commonest site of disease followed by Ileocaecal region (40%). Peritoneal involvement was noted in 18% of the patients (Table 4).

In 10% of the patients resection of diseased segment of the small bowel and end to end anastomosis was done whereas local resection of ileocaecal region with ileo transverse anastomosis was performed in 12% of the patients. About 18 and 10% of the patients underwent right hemicolectomy and ileotransverse bypass alone respectively. Stricturoplasty in 10 and perforation repair was done in 12% of the patients. Adhesiolysis was carried out in 5% of the patients whereas the biopsy of mesenteric lymph nodes draining the affected segment, omental or peritoneal tubercle was taken in 20% of the patients. 3 (3%) patients required ileostomy as a secondary procedure in the cases of abdominal cocoon in which iatrogenic perforation has occurred (Fig. 2).

Caseating granuloma of bowel were seen in 23% of specimens. Noncaseating granuloma found in 17% of the specimens however in these patients diagnosis

confirmed by histopathological examination of draining lymph nodes. Tubercular lymphadenitis and tubercular granulation tissue were noted in 42 and 18% respectively.

In systemic complications septicemia and bronchopulmonary complications were reported in 6 and 3% of the procedures respectively. Mortality was encountered in 8% of the procedures, majority being an emergency 7 (87.5%). Surgical site infection was the commonest complication encountered in 19% of the procedures, out of which 5 (26.3%) were associated with anastomotic leak and 2 (10.5%) with burst abdomen. Anastomotic leak was reported in 9% of the procedures and in one such case it led to burst abdomen. Recurrent obstruction was noted in 9% of operated cases (Table 5).

Table 3: Radiological investigations

On X Ray	No. of patients	Percentage
Multiple air fluid levels	22	22
Gas under the diaphragm	12	12
Dilated bowel loops	28	28
No significant finding	38	38
On USG		
Ascitis	40	45
Mesenteric lymphadenopathy	58	66
Thickened ileocaecal junction	28	32
Ileocaecal mass	18	21
Dilated bowel loops	50	56
No significant abnormality	20	23
CECT- scan Findings		
Ascitis	40	100
Ileocaecal mass	18	45
Hypertrophied caecum with ileocaecal junction stricture	12	30
Thickened terminal ileum with caecum and/ or ascending colon	8	20
Mesenteric lymphadenopathy	38	95
Omental thickening	5	12.5

Table 4: Site of Disease

Site of disease	No. of cases
G.I.T	
Jejunal + Mesenteric lymph nodes	5
Ileum + Mesenteric lymph nodes	15
Ileocaecal + Mesenteric lymph nodes	40
Ascending colon+ Mesenteric lymph nodes	2
Mesenteric lymph nodes alone	20
Peritoneal involvement (tubercles, ascitis, cocoon, omentum thickening)	18
Total	100

In our study 58% cases were between 21-40 years of age and mean age was 33.8 years with male female ratio is 1:1.12 and was more common in low socioeconomic group (60%). Similarly Khan et al.[4] also reported maximum incidence (38%) in 21-30 years age group. Saaiq *et al*.[5] also reported male to female ratio of 1.1.

In our study, pain abdomen was the commonest (100%) symptom among the patients of abdominal tuberculosis followed by loss of appetite (80%), abdominal distension (50%), loss of weight (50%), vomiting (40%), altered bowel habits (35%) and fever (30%). Lump abdomen (18%) and cough (12%) were the least frequent complaints of the patients. Similarly Chalya *et al*.[6] also reported pain to be the chief complain (93.8%) of patients with abdominal tuberculosis followed by abdominal distension (56.7%) and vomiting (79.7%).

In our study, elevated ESR was a consistent finding in the patients of abdominal tuberculosis (100%) whereas Uzunkoy *et al*.[7] and Khan *et al*.[4] observed raised ESR in 81.8 and 90.9% of the patients respectively.

Chest x-ray was done in all cases of abdominal tuberculosis and findings indicative of pulmonary tuberculosis were seen in only 10% of the cases. Amongst them 4% had concurrent active pulmonary tuberculosis (sputum positive). Similarly Sharma *et al*.[7] observed higher incidence (46%) of pulmonary tuberculosis in patients of abdominal tuberculosis.

Ultrasonology abdomen and pelvis was done in 88 patients. Mesenteric lympahadenopathy (66%) was the commonest finding followed by dilated bowel loops (56%), ascitis (45%), thickened ileocaecal junction (32%), Ileocaecal mass (21%). 23% of the patients had no significant abnormality in ultrasonology examination. Also Heller *et al*.[9] reported mesenteric lymphadenopathy (96.7%), ascitis (73%) on USG examination in patients of abdominal tuberculosis.

Table 5: Complications

		Systemic complications		
Procedure	No. of cases (n)	Septicemia n (%)	Broncho-pulmonary complication n (%)	Death n (%)
A.				
Resection and anastomosis of small bowel	10	2 (20%)	-	2 (20%)
Local resection and Ileo-transverse anastomosis	12	1 (8.33%)	-	1 (8.33%)
Ileo transverse bypass	10	-	-	-
Perforation repair	12	3 (25%)	2 (16.67%)	4 (33.33%)
Adhesiolysis	5	-	-	-
Stricturoplasty	10	-	-	-
Ileostomy	3	-	-	-
B.				
Right hemicolectomy	18	-	1 (55.56%)	1 (55.56%)
Biopsy of mesenteric lymph nodes	20	-	-	-
Total	100	6 (6%)	3 (3%)	8 (8%)

In our study, CECT abdomen and pelvis was done in 40 cases of abdominal tuberculosis and it revealed that ascitis (100%) and mesenteric lymphadenopathy (95%) were present in majority of patients whereas ileocaecal mass (45%), hypertrophied ileocaecal junction with stricture (30%), thickened ileocaecal junction and ascending colon (20%) and omental thickening (5%) were less frequently seen finding on CT scan. Similarly A Uzonkoy *et al*.[7] also reported ascitis in 100% of the patients on CECT abdomen and pelvis in patients of abdominal tuberculosis.

In our study mesenteric lymph nodes happened to be the commonest (82%) site of disease. In the gastrointestinal tract ilocaecal region was the commonest site (40%) followed by ileum alone (15%), jejunum (5%) and ascending colon (2%). Peritoneal involvement was seen in 18% of the cases. Also Thapa *et al*.[10] observed mesenteric lymph nodes as the commonest site (72%) followed by ileocaecal region in 54.98% of the patients.

In our study, depending upon the intra operative findings various surgical procedures had to be performed. About 40% cases necessitated resection of the diseased portion of bowel which included right hemicolectomy (18%), local resection and ileotransverse anastomosis (12%) and resection and anastomosis of the small bowel (10%). The therapeutic trial of antitubercular drugs in patients with only abdominal symptoms and no evidence of tuberculosis elsewhere in the body is not justified. There for exploratory laparotomy becomes essential to confirm the diagnosis and if required, do needful surgery. All other authors like Vij *et al*.[11], Kapoor[12] prefer to give combined chemotherapy for 9-12 months durations.

Mortality rate of 8% was noted in our series, majority (87.5%) of which was operated in emergency. Only 12.5% who underwent elective operations succumbed during our study. About 50% of the mortality was in cases of perforation peritonitis. A mortality rate of 10% was reported by Bhansali[13] while it was 13.2% in study by Akgun *et al*.[14].

CONCLUSION

Abdominal tuberculosis is not an uncommon disease affecting young adults of both sexes belonging to low socioeconomic status in the most productive years of their lives and requires a high index of suspicion for diagnosis. A large proportion of patients ignore symptoms and do not present until some form of complication develops which carries considerable morbidity and mortality. Ultrasonology, which is cheap and readily available, is a useful tool in the diagnosis. CECT scan of abdomen and pelvis increases the accuracy of diagnosis. The results of surgery plus DOTS are satisfactory.

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