Original Research Article

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Surgical interventions in abdominal tuberculosis: a clinico-pathological study

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ABSTRACT

Background: Abdominal tuberculosis is a common site for extrapulmonary TB, which affects young population and poses a big diagnostic and therapeutic challenge.

Methods: A total 100 cases suspicious of abdominal tuberculosis undergoing surgical interventions were studied in the present study in our institute for period of 18 Months.

Results: Males belonging to young age group of 21-40 were most commonly affected. Primary abdominal tuberculosis was the most common etiopathological cause. Abdominal pain seen in 86% of patients. Abdominal tenderness seen in 84% of patients. The condition was more common in people of low socioeconomic status. Primary abdominal tuberculosis was more common than cases secondary to pulmonary TB. Majority of patients had abdominal pain and distention at the time of presentation. Bowel adhesions was the most common intra operative finding followed by stricture, mesenteric lymphadenopathy and bowel perforations. Majority of biopsies show granulomatous lesions. Exploratory laprotomy with adhesiolysis was the most common single procedure performed multiple procedures with covering ileostomy resulted in better survival, lower serious post-operative complication rate and shorter duration of hospital stay.

Conclusions: Young males are most commonly affected usually presents with abdominal pain. Bowel adhesions and strictures were most common intraoperative finding, an ileostomy in selected cases found to be result in significant reduction in morbidity and mortality in cases of abdominal tuberculosis undergoing surgery.

Keywords: Abdominal tuberculosis, Clinico-pathological study, Ileostomy, Stricture, Surgical interventions

INTRODUCTION

Abdominal tuberculosis is sixth most frequent site of extrapulmonary tuberculosis. Tuberculosis can involve any part of gastrointestinal tract from mouth to anus, abdominal TB comprises of peritoneum, gastrointestinal tract, omentum, mesentery and its lymph node and other abdominal organs like liver, spleen and pancreas. Abdominal TB has vague symptoms and varied presentation, can mimic a variety of other abdominal conditions and only a high degree of suspicion can help in diagnosis otherwise it is likely to be missed or delayed resulting in high morbidity and mortality.

Gastrointestinal TB constitutes 70-80% of abdominal TB.² Ileocecal region is the most commonly involved site due to abundance of lymphoid tissue (Payer's Patches), increased physiological stasis, rate of fluid and electrolyte absorption and minimum digestive activity.^{2,3} The frequency of bowel involvement declines as one proceeds both proximally and distally from ileocecal region. Rarely may it also involve stomach, duodenum and oesophagus. The three characteristics lesions of intestinal region produced in tuberculosis include, ulcerative,

hypertrophic, and strictures or constrictive or a combination of these three.³

Peritoneal involvement can occur in approximately 4-6% extrapulmonary TB.⁴

Surgery is usually reserved for patients who have developed complications, including free perforation, confined perforation with abscess, complete obstruction or sub-acute obstruction not responding to medical management. However, laparotomy is probably the most reliable as a full examination of the peritoneal cavity can be carried out and biopsies taken out with ease. The choice of procedure to be performed depends upon the intraoperative findings after laparotomy.

The present study is to design observe the clinicopathological pattern of abdominal tuberculosis, and access the morbidity and mortality associated with various procedures performed in the patients for abdominal tuberculosis.

METHODS

The present study was conducted on 100 patients, hospitalized, who were suspicious of abdominal tuberculosis and were subsequently operated from (January 2016 to July 2017) in the Department of General Surgery, Hamidia Hospital Associated to Gandhi Medical College, Bhopal.

Inclusion criteria

All surgeries routine as well as emergency in patients who were suspicious of abdominal tuberculosis.

Exclusion criteria

- Those cases which are not suspicious of abdominal tuberculosis
- Those who were managed conservatively.
- Children below 12 years of age.

All patient who were selected a detailed history was recorded, clinical examination, laboratory investigation, chest x-ray, ultrasonography, biopsy, were done. All patients have undergone laparotomy and appropriate procedures according to intraoperative findings. Patients were put on ATT according to RNTCP guidelines under DOTS regimen, their progress and follow up was recorded. Results were computed as percentages of total participants. Furthermore, data were internally compared for age and gender, and outcomes were also compared accordingly and was tabulated.

RESULTS

Highest incidence of abdominal tuberculosis was seen in age group between 21-40 years which accounts for 64% of cases, Male; female ratio was 1.4:1.

Table 1: Age distributions.

Age groups (years)	No. of cases	Percentage
12-20	15	15%
21-30	36	36%
31-40	28	28%
41-50	8	8%
51-60	8	8%
61-70	5	5%

Table 2: Sex distributions.

Sex	No. of cases	Percentage
Male	58	58
Female	42	42

Table 3: Distribution as per socioeconomic status.

Socio-economic status	No. of cases	Percentage
Low	56	56
Middle	32	32
High	12	12

Incidence of abdominal tuberculosis was higher in peoples belonging to low-socio economic status.

Table 4: Distribution as per etiopathogenesis.

Etiopathogenesis	No. of cases	%
Abdominal tuberculosis		
secondary to pulmonary	32	32
tuberculosis		
Primary abdominal tuberculosis	68	68

Table 5: Clinical features.

Symptom	No. of cases	Percentage
Abdominal pain	86	86
Abdominal distension	78	78
Vomiting	60	60
Weight loss	54	54

Table 6: Clinical features.

Sign	No. of cases	Percentage
Abdominal tenderness	84	84%
Fever	56	56%
Anaemia	44	44%
Abdominal lump	20	20%
Ascites	22	22%

Primary abdominal tuberculosis was more common etiopathogenesis seen in 68% cases then those who develops abdominal tuberculosis secondary to pulmonary tuberculosis. Abdominal pain was the most common symptom which is seen in 86% cases, followed by abdominal distension vomiting and weight loss.

Abdominal tenderness was the most common sign seen in 84% cases, followed by fever, anaemia, abdominal lump.

Table 7: Operative findings.

Intraoperative findings	No. of cases	Percentage
Bowel adhesions	84	84
Stricture	66	66
Enlarged mesenteric lymphadenopathy	62	62
Purulent peritonitis	60	60
Bowel perforation	54	54
Plastered abdomen	40	40
Ileocecal mass	12	12

Bowel Adhesions was commonest finding seen in 84% cases followed by stricture 66% and lymphadenopathy in 62% of cases.

Table 8: Operative procedures.

Procedures	No. of cases	Percentage
Exp lap with adhesiolysis	28	28
Exp lap with segmental resection and anastomosis	16	16
Exp lap with resection and anastomosis with ileostomy	14	14
Exp lap with biopsy	12	12
Exp lap with perforation repair with ileostomy	9	9
Exp. lap with ileostomy	8	8
Exp lap with primary perforation repair	8	8
Exp lap with stricturoplasty	5	5

Adhesiolysis was the most common procedure performed which was done in 28% cases. Exp. lap with segmental resection and anastomosis was done in 16% cases

Table 9: Post-operative complications.

Post-operative complications	No. of cases	Percentage
Wound infection	34	34
Chest related complications	22	22
Stoma related complications	14	14
Burst abdomen	6	6
Faecal fistula	4	4

Wound infection was most common complication which was seen in 34% of cases, followed by chest related complications. Granulomatous lesion was found in 84% of cases out of which 64% were Non caseating granulomas and 20% were caseating granulomas.

Histopathological findings showing chronic inflammatory cells without granuloma in 16% cases and were termed as biopsy negative.

Table 10: Histopathological findings.

Biopsy findings	No. of cases	Percentage
Granuloma		
Non caseating granuloma	64	64
Caseating	20	20
Chronic inflammatory cells without granuloma	16	16

Table 11: Clinical outcome and mortality.

Outcome	No. of cases	Percentage
Relieved and discharged	90	90
Death	10	10

90% of patient were relieved and discharged and the mortality rate was 10% in the study.

Table 11: Complications in patients with or without stoma.

Complications	Patients of abdominal tuberculosis with stoma (n = 69)	Patients of abdominal tuberculosis without stoma (n = 31)	P value
Wound infection	7	27	0.1052
Chest related complication	6	15	0.7871
Stoma related complication	11	0	Significant
Burst abdomina	0	6	Significant
Faecal fistula	0	4	Significant
Mean duration of hospital stay	5.3	19.5	0.001
Mortality	0	10	Significant

The rate of complication i.e. the mean duration of hospital stays Mortality rate and post-operative complications like Burst abdomen and faecal fistula were stastically significantly low in patients of abdominal tuberculosis operated with stoma formation as compared to patients operated without stoma formation.

DISCUSSION

In present study, maximum incidence of abdominal tuberculous was found in the age group 21-40 years which was 64% cases. In the study conducted by Muhammad Saleem Shaikh SM Sisodia Tandon HD, Anil Kumar, Veerabhadrarao Rao reported that the majority of the patients were of age group between 20-40 yrs. ⁵⁻⁹ We observed that there is slight male

preponderance with Male:Female ratio of 1.4:1, in the study conducted by Chalya PL. Male:female ratio was (1.4:1), in study by Urabinohatti KA ratio was 1.8:1, Awasthi S also reported ratio of 1.4:1, and male preponderance was the finding in most of the studies. However in some studies Sankpal J et al. Male:female ratio was 1:1.6, Hossain SM reported ratio of 5:8. 13,14

Incidence of abdominal tuberculosis was found to be higher in people's belonging to low socioeconomic status i.e. 56% of the total. Most of the other studies have also shown similar observations.⁸⁻¹⁰

In present study cases with primary abdominal tuberculosis (68%) were more common than patient with abdominal tuberculosis associated with pulmonary TB on family history of pulmonary TB (32%).

Kumar R reported that 30% of cases were associated with pulmonary TB.¹⁵ Awasthi S and Chalya PL observed that 22.6% and 29% respectively were associated with pulmonary tuberculosis.^{10,12}

Abdominal pain was the most common symptoms seen in 86% cases. Chalya PL et al reported that (93.8%) cases had abdominal pain when first seen, the other studies have also shown abdominal pain as the most common symptoms. Abdominal tenderness was the most common sign seen in 84% cases. Shaikh MS also have abdominal tenderness as the most common sign seen in 91%. However, some studies have reported pallor as the most common sign. 5,13,15

Bowel adhesion was the most common intraoperative finding seen in 84% cases in our series, other studies have also shown bowel adhesion as the most common intra-operative finding.^{15,17}

Adhesiolysis was the most commonly performed single surgical procedure in 28% cases. Chalya PL, Kumar R, Chrokar K have also shown similar results. However, Rao V observed segmental resection as the most common performed surgical. 9,10,15,17

Wound infection was the most common complication seen in 34% cases. Charokar K, Chalya PL have also shown wound infection as most common post-operative complication seen in 29% and 37% respectively. ^{10,17}

Histopathological evaluation was done in all cases, 84% were found to be positive for abdominal tuberculosis with non-caseating granuloma in 64% cases and caseating granuloma in 20% cases. Chalya PL and Mavilla R have shown 86% and 76% histopathologically positive tubercular lesions respectively. 10,16

Overall mortality rate was 10% in present study, Anil Kumar, SM Hossain have shown 10% and 15% mortality rate respectively. ^{8,14}

CONCLUSION

Abdominal tuberculosis is an important clinical entity having varied mode of clinical presentation. Abdominal tuberculosis usually has male preponderance, affecting peoples of younger age groups, of low socioeconomic status, abdominal pain and abdominal distension are the most common symptoms seen. Abdominal tenderness and fever are the most common sign seen. Mostly the affected groups are anaemic, Bowel adhesions and strictures were the most common intra-operative findings seen. Exp laprostomy with adhesiolysis were the most common procedures performed. Wound infections and chest related complications are the most common complications seen. Mean duration of stay in procedures with stoma were significantly low compared to procedures without stoma. Most of the post-operative complications are also very low in procedures with stoma as compared to without stoma. The overall mortality is also very less in procedures with stoma as compared to procedures without stoma, although patients with stoma formation is associated with a few stoma related complications but have resulted better outcome of the patients of abdominal tuberculosis undergoing surgical interventions in reference to reduced duration of stay in hospital, fewer number of post-operative complications. This difference was found to be statistically significant.

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Institutional Ethics Committee

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