Original Article

Incidence of Abdominal Tuberculosis in 186 cases of Acute Abdomen presenting in our Surgical Emergency Department

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ABSTRACT

Objective: Among 186 cases of Acute Abdomen, determining the frequency of Abdominal Tuberculosis patients with their outcome.

Design & Duration: A prospective case study from January, 2009 to June 2010.

Setting: Surgical Unit-V District Headquarters (Teaching) Hospital, Faisalabad.

Methodology: Detailed data of each patient including presentation, operative findings, procedure performed, post operative outcome and histopathology was entered on a specially designed Performa, compiled and analyzed.

Results: During the period of study, 186 patients presented in the surgical emergency with complaints of acute abdomen out of which 54 (29.03%) were of abdominal tuberculosis. Mean age of presentation was 27.3 years. Operative findings showed predominance of ileocaecal hypertrophic tuberculosis (tuberculous mass) in 18 (33.33%) patients, followed by tuberculous adhesions, ileal strictures and plastic gut. The surgical procedures were performed according to their intra-abdominal findings out of which right hemicolectomy with ileocolic end to end anastomosis in 18 (33.33%) patients remained the commenest procedure performed followed by segmental ileal resection anastomosis, ileostomy and stricturoplasty. 20 (37.04%) patients reported to have post-operative complications in which wound infection in 7 (12.96%) remained the highest occurring post-operative complication followed by intra-abdominal collection, anastomotic leakage and septicemia. Mortality rate among the patients of abdominal tuberculosis in this study remained 5.56%.

Conclusion: Complicated abdominal tuberculosis is the most common pathology of acute abdomen. By proper management of pre-complicated abdominal tuberculosis, this disastrous stage of disease resulting in so morbidity and mortality can be reduced.

Key words: Abdominal tuberculosis, Acute abdomen

INTRODUCTION

Extrapulmonary tuberculosis (TB) can involve any part of the gastrointestinal tract from mouth to anus, the peritoneum, and the pancreatobiliary system. The clinical presentation of abdominal TB may mimic other common and rare gastrointestinal diseases thus presenting a diagnostic challenge[1]. Abdominal tuberculosis may be present as a complication of advanced pulmonary tuberculosis or may manifest itself without active pulmonary disease. Before the era of effective antitubercular drug therapy, the prevalence of intestinal tuberculosis on autopsies of patients who died with active pulmonary tuberculosis was 55% to 90[2]. On the other hand, the prevalence of gastrointestinal tuberculosis in autopsies of patients without pulmonary tuberculosis is 3.72% in the developing countries[2]. One of the previous studies conducted in Pakistan has shown intestinal tuberculosis as the second leading cause of intestinal obstruction[12].A patients with gastrointestinal TB can present with an acute abdomen mimicking acute intestinal obstruction and or peritonitis resulting in a diagnostic and management dilemma[21,22]. The aim of this study was to examine the prevalence of gastrointestinal TB in patients presenting with acute abdomen.

PATIENTS AND METHODS

This study was conducted at Surgical Unit-V, District Headquarters (teaching) Hospital, Faisalabad, Pakistan. All patients who presented to the Emergency Department with acute abdomen and underwent laparotomy between January 2009 and June 2010 were included in this study. Patients who presented with

abdominal trauma were excluded from the study. All patients underwent a complete history and physical examination as part of the study protocol. Complete blood count, erythrocyte sedimentation rate, serum electrolytes, renal function tests, serum glucose, and chest and abdominal X-rays were obtained for all patients. In addition, some patients underwent abdominal ultrasound in which the results of other investigations were inconclusive.

Prior to surgery, all patients were resuscitated with correction of fluid and electrolyte balance, had a nasogastric tube placed for decompression, and received a loading dose of intravenous antibiotics and proton pump inhibitors. Final diagnosis was made based on the suggestive operative findings and confirmed by histopathological examination of the operative specimens according to the protocol insturctions.

RESULTS

During the 18-month study period, 186 patients presented to the Emergency Department with acute abdomen. Patients had a median age of 24 years (range 14 years to 70 years) and the majority were male (59.26%). The final post-operative diagnoses of the 186 patients are listed in table 1.

Table 1:
Distribution of diseases among patients of acute abdomen, n = 186

Causes	No.	%
Abdominal Tuberculosis	54	29.03
Typhoid Perforation	34	18.27
Duodenal or Gastric Perforation	22	11.83
Obstructed Hernia	06	3.22
Volvolus	05	2.69
Malignancy	03	1.61
Miscellaneous	62	33.33

Among 54 patients of intestinal tuberculosis, the age ranged between 16 to 55 years with a majority (66.67%) falling between 20-40 years of age as depicted in table II. Out of these patients 22 were female and 32 male patients with a male to female ratio of 1:0.69. 12 (22.22%) were having evidence of pulmonary tuberculosis on X-ray Chest and 47 (87.04%) had a raised ESR. 11 patients (20.37%) were known cases of pulmonary tuberculosis, six had completed anti-tubercular therapy in the past while two discontinued it after three and five months respectively.

Table 2:
Age distribution among patients of Abdominal Tuberculosis, n = 54

Age group	No.	%
11-20 years	06	11.11
21-30 years	21	38.89
31-40 years	15	27.78
41-50 years	07	12.96
51-60 years	03	5.56
61-70 years	02	3.70

The operative findings and the sites of involvements in cases of abdominal tuberculosis is depicted in Table III. The commonest site being the ileoceacal region.

Table 3:
Distribution of operative findings among patients of abdominal tuberculosis, n = 54

Operative Findings	No. of patients	%
Ileocaecal hyertrophic tuberculosis (Tuberculous mass)	18	33.33
Tuberculous adhesions or bands	13	24.07
Ileal stricture with perforation	10	18.52
Multiple ileal strictures	07	12.96
Plastic gut	04	7.41
Single ileal stricture without perforation	02	3.70

The commonest surgical procedure done was right hemicolectomy with end to end ileocolic anastomosis. Various other procedures and their distribution are shown in Table IV.

Table 4:
Distribution of surgical procedures among patients of abdominal tuberculosis, n = 54

Surgical Procedure	No. of patients	%
Right hemicolectomy with ileocolic end to end anastomosis	18	33.33
Segmental resection and end to end ileal anastomosis	12	22.22
Ileostomy	09	16.67
Adhesiolysis	13	24.07
Stricturoplasty	02	3.70

The average hospital stay among patients of abdominal tuberculosis was 1 week, with minimum stay of 3 days to a maximum of 28 days due to complications. Complications encountered in 11 patients of tuberculosis out of which 3 patients expired making a mortality rate of 5.56% due to late presentation resulting in septicemia following peritonitis and complication of anastomotic leak resulting in peritonitis. The distribution and rate of complications are shown in Table V.

Table 5:
Rate and distribution of complications in patients with abdominal tuberculosis, n = 54

Complications	No. of patients	%
Wound infection	07	12.96
Burst abdomen	05	9.26
Intrabdominal abcess/collection	04	7.40
Anastomotic leakage	02	3.70
Septicemia	02	3.70
Total	20	37.04

DISCUSSION

In this study from a developing Country, we found a high prevalence of gastrointestinal tuberculosis in patients presenting with acute abdomen. In fact, gastrointestinal tuberculosis was the most common diagnosis. This study shows the high prevalence of tuberculosis in the general population in developing countries. While we did not examine how many of these patients had intestinal tuberculosis due to mycobacterial bovis infection, infection from drinking milk from infected animals may be partly responsible for this high prevalence[15,16]. Intestinal tuberculosis holds sixth place according to involvement of extrapulmonal localizations, after lymphonodular, genitourinary, bone, miliar and meningea. There are three ways of spreading of microbacteria into abdomen: (1) Hematogenically from reactivated primary foci (2) Endoluminally – by ingestion of expectorated content from active pulmonary lesions, or by food ingestion, that is, milk contaminated by bacillus (presence of protective lipid capsule protects mycobacterium from enzyme and stomach acid effects, making intestine infection possible). (3) Spreading infection from adjacent organs, primarily from female genital organs[9,10]. The disease is considered to be the fourth major cause of all deaths in Pakistan[11], and the second commonest cause of intestinal obstruction[12].

We found a higher prevalence of GI TB in younger patients. This is consistent with findings from other studies that have found higher prevalence of GI TB in younger age group and of pulmonary TB in the older age group[13,14].

Majority of patients in our study belonged to poor socio-economic class which is also reported in other studies. Poor nutritional status, lack of health facilities and poor pasteurization of milk have been implicated to contribute to this problem[15,16].

Amongst 54 patients, 12 (22.22%) were associated with pulmonary tuberculosis on X-ray chest. Other studies have shown a rate ranging from 7% to 40 % in this regard[17,18]. 47 (87.04%) patients had raised ESR, which is consistent with results of other studies as well[19,20].

Non specific clinical picture, radiology, laboratory, endoscopic examinations and operative finding, can be misleading to diagnosis of ileocecal malignoma, Chron's disease or intestinal tumors like extranodal MALT (mucosa associated tissue ymphoma)[21,22]. In such cases, diagnostic dilemma can be solved only by laparoscopy or laparatomy and biopsy, as described in literature[23,24].

Ileocaecal Hyertrophic Tuberculosis (Tuberculous Mass) was the commonest operative finding in 18 (33.33%) cases, followed by Tuberculous Adhesions or bands in 12 (24.07%) ,intestinal strictures (single or

multiple) in 9 (16.67%) cases, intestinal perforation in 10 (18.52%) and frozen abdomen (Plastic peritonitis) in 4 (7.41%) patients. In other studies frozen abdomen and strictures were the commonest findings[25,26].

Different surgical procedures were performed on these patients according to their per-operative findings, among which right hemicolectomy with ileocolic end to end anastomosis in 18 (33.33%) patients being the most frequently performed procedure, followed by segmental resection and end to end ileal anastomosis in 12 (22.22%) , adhesiolysis in 13 (24.07%), ileostomy in 9 (16.67%) and strictureplasty in 2 (3.70%). Similar findings were recorded by other writers also[17,26]. Anti-tuberculous therapy was prescribed in all the tubercular patients postoperatively.

The over all mortality rate in this study was 5.56% among the patients of abdominal tuberculosis, which is comparable to the other studies which have reported it to be 6 – 50% [17,27,28].

CONCLUSION

Abdominal tuberculosis still remains the one of the most common cause of morbidity and mortality among surgical patients despite of all preventive measures being developed in past few decades. More commonly presenting in young age group, abdominal tuberculosis is still challenging diagnostic difficulties being most of the cases diagnosed by per-operative findings and histopathological confirmation. Timely surgical intervention and long term follow-up with anti-tuberculous treatment remains the hallmark in reducing complications and mortality rate among the patients of abdominal tuberculosis.

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