Original Article

Surgical Management of Abdominal Tuberculosis: Experience from a Tertiary-Care Center

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ABSTRACT

Objective: To evaluate the role of surgery in the management of abdominal tuberculosis.
Study Design: Abdominal tuberculosis study.
Place and Duration of Study: This study was conducted at the Department of Surgery Unit-II, Peoples University of Medical and Health Sciences, Nawabshah, and Department of Surgery, Suleman Roshan Medical College Hospital, Tandoadam, from January 2017to December 2019.
Materials and Methods: Cases were analyzed in terms of demography, clinical features, investigations, operative treatment, and outcome. The data was collected on a structured proforma, analyzed statistically and the results were tabulated.
Results: During study period 39 cases of abdominal tuberculosis were operated, comprising 22 (56.4%) male and 17 (43.6%) female, majority 14 (35.9%) patients were in age group ranged between 12-20 years, 79.5% of population was belonging to low socioeconomic status. The clinical presentation of 69.2% patients was revealing features of peritonitis, followed by acute intestinal obstruction in 30.8% cases; ileal perforation was the commonest intra-operative finding in 43 % of cases followed by multiple small bowel perforations in 20.5% of cases. The most frequent surgical procedure applied was ileostomy in 41 % of cases followed by resection anastomosis in 17.4%of cases. The complications were observed in 7cases, in which the most frequent one was the surgical site infection which was observed in 05 cases. The overall hospital stay observed was 7 to 38 days with a mean of 17 days. 38 patients were discharged after recovery on anti-tubercular therapy, and one patient was expired during immediate post-operative management period. The follow up was observed in 22 cases for a period of 12 weeks to 48 weeks.
Conclusion: Early "diagnosis is the important factor to prevent systemic and local complications of intestinal tuberculosis. In emergency cases, without delay surgical exploration and attentive care is met with good recovery. Resection-anastomosis in the form of right hemi-colectomy or segmental resection has largely been adopted instead of simple bypass of obstructive lesions with good result".
Key Words: Intestinal tuberculosis, Peritonitis, Intestinal stricture, Bowel perforation, Resection anastomosis, Ileostomy.

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INTRODUCTION

In developing countries, the tuberculous infection is a major health concern causing eminent morbidity and mortality[1]. In these countries the ignored population has major issues of malnutrition, overcrowding, poor sanitation and poverty[2]. The tuberculosis of the gastroitedtinal tract is the sixth most common form of extra pulmonary tuberculosis[3], which is about 10%-30% of cases having pulmonary tuberculosis[4].

It is among the top ten mortality causes worldwide, and in the year 2017 it was estimated that the tuberculosis will affect ten millions of peoples globally with about 1.3 million deaths[5].It was also expected that the underlying dormant infection is present in about world's 25% of population[6]. The male population is slightly more affected than the female and especially the young adults[3,4]. The diagnosis of abdominal tuberculosis id often difficult and remains one of the challenge in clinical practice, even for experienced consultants[7]. The management of the disease is even more difficult the multi drug-resistance is inevitable[8].About 15% of cases of abdominal tuberculosis are treated by surgery, among which half

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of the cases the surgery is performed in emergency due to complications like; perforation, obstruction, abscess or hemorrhage, in remaining half the surgery is performed as a diagnostic measure[9].

The disease can involve any part of the gastrointestinal tract, but most commonly ileocecum and terminal ileum are involved[10]. The histological appearance of the lesion is similar as that in other organs, as the classic appearance of epithelioid granulomas with central caseation necrosis is not present in all parts of the gastrointestinal tract so the histological diagnosis in these cases is very difficult because of close resemblance with Chron's disease and other inflammatory disorders[11]. A simple cost-effective diagnostic laboratory test that can be used routinely for abdominal tuberculosis is not yet available. Currently, the diagnosis of abdominal tuberculosis should be reached by a combination of clinical, laboratory, radiographic, and pathological findings[7], as there is no any gold standard yet for the diagnosis so high clinical suspicion is required[12.]

MATERIALS AND METHODS

This retrospective descriptive work was conducted during January 2017 to December 2019, in the Department of Surgery Unit –II, Peoples University of Medical and Health Sciences, Nawabshah, and Department of Surgery, Suleman Roshan Medical College Hospital, Tandoadam. The record of all the cases of abdominal tuberculosis operated during the study period was retrieved. The only inclusion criteria were abdominal tuberculosis confirmed on histopathology. Cases were retrospectively analyzed with regards to demography, clinic-pathological profile, intra-operative findings, surgical intervention performed and outcome in terms of morbidity and mortality. For the purpose of follow up, we searched the Out Patient Department records and re-admission record. All the data searched was collected on a structured proforma, analyzed statistically and the results were tabulated.

RESULTS

In our study a total of 39 cases were retrieved having abdominal tuberculosis, comprising 22 (56.4%) male and 17 (43.6%) female. We divide the study population in seven groups according to decades, we observed majority 14 (35.9%) patients in group having age ranged between 12-20 years (Table-I). The age of patients in our series was ranged from 11 to 76 years with a mean of 26.8 years. Our study shows 31 (79.5%) of population was belonging to low socioeconomic status. The clinical presentation of 27 (69.2%)patients was revealing features of peritonitis, followed by acute intestinal obstruction in 12(30.8%) cases, the other associated symptoms were of low grade fever, abdominal mass, pain in abdomen, tenderness, anorexia, malaise, weight loss, disturbed bowel habits, malabsorption, and anemia. We observed the ileal perforation as commonest intra-operative finding in 17 (43.6%) cases followed by multiple small bowel perforations in 08 (20.5%) cases, the other intra-operative findings are listed in table-II, more than one operative finding were observed in 6 cases. The most frequent surgical procedure applied was ileostomy in 16 (41%) cases followed by resection anastomosis in 07 (17.4%) cases, the other surgical procedures are mentioned in table-III. The complications were observed in 07 (17.4%) cases, in which the most frequent one was the surgical site infection, which was observed in 05 cases, the leakage from the primary intestinal repair was not observed and there was no any case of post-operative fistula formation. The other complications are mentioned in table- IV. The overall hospital stay observed was 7 to 38 days with a mean of 17 days, majority of cases were discharged in 7-10 days but the patients who developed complication were stayed longer.

Table No.1 Age Groups in Study Population (n=39)

Age Group (years)	Male	Female	No. of Patient (%)
12-20	10	04	14 (35.9)
21-30	02	07	09 (23.1)
31-40	03	02	05 (12.8)
41-50	03	02	05 (12.8)
51-60	02	01	03 (7.7)
61-70	01	01	02 (5.1)
>70	01	00	01 (2.6)
Total	22 (56.4%)	17(43.6%)	39 (100)

Table No.2: Intra-Operative Findings in Study Population (n=39)

Intra-Operative Findings	No. of Patient (%)
Ileal Perforation	17 (43.6)
Multiple Small Bowel Perforations	08 (20.5)
Solitary Stricture with Perforation	05 (12.8)
Ileoceacal Mass and Mesenteric Thickening	04 (10.3)
Bands and Adhesion	04 (10.3)
Single or Multiple Strictures	03 (7.7)
Stricture with Impending Perforation	03 (7.7)
Jejunal Perforation	02 (5.1)
Mesenenteric Lymphadenitis	01 (2.6)
Peritoneal Adhesions with Cocoon Formation	01 (2.6)

Table No.3: Operative Procedure Performed on Study Population (n=39)

Procedures Performed	No of Patient (%)
Ileostomy	16 (41.0)
Resection and Anastamosis	07 (17.4)
Primary Repair of Perforation	05 (12.8)
Right Hemicolectomy	04 (10.3)
Adhesiolysis	03 (7.7)
Stricturoplasty	02 (5.1)
Jejunostomy	01 (2.6)
Peritoneal and Omental Biopsy	01 (2.6)

Table No.4: Complications Observed in Study Population (n=39)

Complication	No of cases (%)
Surgical Site Infection	05 (12.8)
Paralytic Ileus	03 (7.7)
Sepsis	03 (7.7)
Intra-Abdominal Abscess	02 (5.1)
Pulmonary Complications	01 (2.6)
Wound Dehiscence	01 (2.6)

The results of surgical intervention were good in these cases and 38 patients were discharged after recovery on anti-tubercular therapy, and one patient was expired during immediate post-operative management period. The follow up was observed in 22 cases for a period of 12 weeks to 48 weeks.

DISCUSSION

We retrieved 39 cases for study including 22 (56.4%) male and 17 (43.6%) female. The dominance of male population is also mentioned by other workers[13-15], but some studies show female dominance[16], the reason for the gender dominance is not stated in the literature. The mean age in our study was 26.8 years, different studies had demonstrated different mean ages and the differences are mainly due to differences in sample size[13,14]. The majority 14 (35.9%) of cases in our study lies in the age group having age ranged between 12-20 years, which is also stated by the other workers[17]. We reported 79.5% of cases from low socioeconomic status group, which was in consistence with the findings of other studies[13,14,18]. This is due to fact that the current study was commenced in rural area where poverty and illiteracy plays an important role in the propagation of the disease. Most of the patients in our study came with the presentation of peritonitis and intestinal obstruction, the literature also revealing the similar findings[3, 19], the diagnosis in these cases was delayed because the poverty, low literacy rate, poor health care facilities in remote areas, lake of disease knowledge and vague initial symptoms, all are collectively contributing factors resulting in cunctation of diagnosis[13,14,19]. Ileal perforation was the most frequent intra-operative finding that we detect, followed by multiple small bowel perforations, these observations were also reported by other workers[13,14,20]. The commonest surgical procedure performed in our study was ileostomy followed by resection anastomosis of the involved bowel segment, many researchers observed the similar results but some performed different other procedures in excess, depending upon the intraoperative findings and anti-tubercular therapy was given to all of the patients postoperatively [13,19-22].

In our study the post-operative anastomotic leak and fistula formation was not detected, following primary intestinal repair that reveals the quality of skill of operating surgeon. We found 15 post-operative complications determined in 07 (17.9%) cases. In our series the surgical site infection was the most common post-operative complication observed in 5 (12.8%) cases, which is in consistence with other studies[13,23]. Out of 39 patients 38 discharged after full recovery on anti-tubercular therapy and 01 (2.6%) patient was expired during immediate post-operative management period, similar mortality rate was observed by other workers also[13,20], but some show a high mortality rate of 30-60%, depending upon condition of patient on presentation and severity of complication[24]. The hospital stay in our study was 7 to 38 days with a mean of 17 days, which comparable with other studies[13,23,25].

CONCLUSION

Abdominal tuberculosis has various manners of clinical presentation mostly the features of peritonitis. Abdominal tuberculosis usually has male preponderance and specially affects the younger ones of low socioeconomic class. Ileal perforation and multiple small bowel perforations are the common intra-operative findings seen. Ileostomy was the most common procedures performed followed by resection and anastomosis. Surgical site infection is the most common complication seen. The mortality is also very low (2.6%) and if no complication arise the majority of cases discharged from the hospital in 7-10 days.

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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