

A Study to Assess the Clinicopathological Profile and Outcome of Surgical Therapy of Abdominal Tuberculosis**Sekhar Chakraborty¹, Bimal Kumar Chatterjee², Shahid Ahmed³**¹Associate Professor, Department of General Surgery, Jagannath Gupta Institute of Medical Sciences & Hospital, Budge Budge, Kolkata, West Bengal, India²Associate Professor, Department of General Surgery, Jagannath Gupta Institute of Medical Sciences & Hospital, Budge Budge, Kolkata, West Bengal, India³Associate Professor, Department of General Surgery, Jagannath Gupta Institute of Medical Sciences & Hospital, Budge Budge, Kolkata, West Bengal, India

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Abstract**Aim:** The aim of this study was to assess the clinicopathological profile and outcome of surgical therapy of abdominal tuberculosis.**Material & Methods:** This study was conducted in Department of General Surgery, Jagannath Gupta Institute of Medical Sciences & Hospital, Budge Budge, Kolkata, West Bengal for the duration of 1 year. A total of 100 patients with intestinal tuberculosis were included in the study.**Results:** It was noted that out of 100 patients, 43 (43%) were in the age range 15-30 years, followed by 27 (27%) in the age group 46-60 years, and 18 (18%) in the age group 61-75 years. The average age was 44.76±17.43 years. Most common presentation was abdominal pain followed by vomiting, distension and constipation. Out of the 70 patients, 58% were female. Intraoperatively, it was found that 42 patients had stricture, 32 patients with perforation, and 14 patients with adhesion. Intraoperatively, it was found that 42 patients had stricture, 32 patients with perforation, and 14 patients with adhesion. Based on location of pathology it was found that terminal ileum was involved in 49 cases (49%). Ileocaecal junction illness affected 38 patients (38%), while proximal bowel disease affected 13 patients (13%).**Conclusion:** The disease is characterised by young age at presentation, delayed manifestation, poverty, and high morbidity and mortality in this region. These issues must be addressed in order to provide the best possible treatment for these individuals. The key to an early and successful diagnosis of abdominal tuberculosis is extreme monitoring in patients with abdominal symptoms.**Keywords:** Intestinal tuberculosis, Malnutrition, Poverty, Abdominal pain, Overcrowding.This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

Tuberculosis (TB) is one of the life-threatening communicable diseases across the world. Tuberculosis (TB) is a pervasive and serious health issue, particularly in developing nations where ignorance, poverty, overcrowding, inadequate sanitation, and malnutrition are prominent. [1] Tuberculosis can involve gastrointestinal tract anywhere from mouth to anus, the peritoneum and pancreatobiliary system. [2] Tuberculosis is a big concern, especially in developing countries, accounting for 7-10 million new cases and 6% of global fatalities each year. [3] Previously a rare disease in the west [4], its incidence is on the rise in west due to increased number of HIV infections with 50% HIV affected patients having extra-pulmonary manifestations of tuberculosis. [5]

In regions where milk supplies continue to be contaminated with tubercle bacilli, or pulmonary or other kinds of tuberculosis are endemic, intestinal tuberculosis is still frequent. [6] Intestinal tuberculosis is most frequent in people between the ages of 25 and 44. [7] Abdominal discomfort, vomiting, abdominal distension, diarrhoea, abdominal mass, and constitutional symptoms such as weight loss, fever, anorexia, and night sweats are all common symptoms. [8,9] Intestinal tuberculosis is one of the common sites of extra-pulmonary involvement. Mycobacterium tuberculosis gains entry in the gastrointestinal tract through haematogenous route, ingestion of infected sputum, or direct spread from infected, contiguous lymph nodes and fallopian tubes. [10]

With a wide array of clinical presentations and lack of definite diagnostic investigations, early diagnosis of intestinal tuberculosis continues to present a challenge for general surgeon. Definite treatment of intestinal tuberculosis remains equally complex. Despite improved health standards in developed countries, tuberculosis is once again on the rise, owing to an influx of immigrants from third-world countries, an increase in the incidence of human immunodeficiency virus (HIV) infection, an ageing population, alcohol addiction, increased use of immunosuppressive drugs, and the emergence of multi-resistant *Mycobacterium tuberculosis* strains. [11,12]

Hence, the goal of this study was to assess the clinical signs and outcomes of surgery for intestinal TB and to compare the clinicopathological profile and outcome of surgical therapy of abdominal tuberculosis

Material & Methods

This study was conducted in Department of General Surgery, Jagannath Gupta Institute of Medical Sciences & Hospital, Budge Budge, Kolkata, West Bengal for the duration of 1 year. A total of 100 patients with intestinal tuberculosis were included in the study.

Inclusion Criteria

All patients with abdominal discomfort, acute/subacute/chronic intestinal blockage, perforation peritonitis, and ascites with a history of tuberculosis or risk factors for tuberculosis who were operated or underwent diagnostic laparoscopy were included in the study after giving written and informed consent.

Exclusion Criteria

Patients with histopathology report other than tuberculosis (inflammatory bowel disorders, other bacterial enteritis, pseudo-obstruction, or cancer).

Patients who were treated on an outpatient basis. Intestinal obstruction in infants and children up to the age of twelve. Patients who refused to undergo surgery.

Methodology

Detailed history and clinical examination was performed in all the cases. Investigations including blood complete picture, ESR, blood urea, blood sugar, electrolytes, serum Albumin Globulin ratio, ultrasound abdomen and X-rays chest and abdomen were done in all cases, while barium meal follow-through and CT scan of abdomen were performed in selected cases. All 100 cases underwent laparotomy, elective or emergent, depending upon the presentation. Preoperative assessment included recording of anatomical site of involvement and type of lesions.

The surgical procedures performed in 100 cases included stricturoplasty, adhesionolysis, resection and anastomosis, right hemicolectomy and ileostomy. All resected specimens, including mesenteric lymph nodes where found, were sent for histopathology.

Statistical Analysis

All relevant information was collected on a pre-designed proforma, and data was analysed and results were drawn in MS excel for this descriptive study. Any statistical analysis was done with the help of SPSS version 29.0 software.

Results

Intraoperatively, it was found that 42 patients had stricture, 32 patients with perforation, and 14 patients with adhesion. Based on location of pathology it was found that terminal ileum was involved in 49 cases (49%). Ileocaecal junction illness affected 38 patients (38%), while proximal bowel disease affected 13 patients (13%).

Table 1: Demographic data

Gender	N%
Male	42 (42)
Female	58 (58)
Age groups in years	
15-30 years	43 (43)
31-45 years	12 (12)
46-60 years	27 (27)
61-75 years	18 (18)

It was noted that out of 100 patients, 43 (43%) were in the age range 15-30 years, followed by 27 (27%) in the age group 46-60 years, and 18 (18%) in the age group 61-75 years. The average age was 44.76±17.43 years. Out of the 70 patients, 58% were female.

Table 2: Causes of intestinal obstruction

Signs and Symptoms	Number of cases	Percentage
Pain abdomen	92	92
Vomiting	64	64
Constipation	56	56
Obstipation	51	51
Distension	60	60
Tenderness	83	83
Rigidity	57	57
Tachycardia	71	71
Mass	33	33

Most common presentation was abdominal pain followed by vomiting, distension and constipation.

Table 3: Distribution of cases according to operative finding and location of pathology

Operative findings	No. of patients	Percentage
Stricture	42	42
Perforation	32	32
Adhesion	14	14
Miliary tuberculosis	27	27
ICJ Mass	5	5
Appendicitis	2	2
Location of pathology		
Terminal ileum	49	49
Ileocaecal junction illness	38	38
Proximal bowel disease	13	13

Discussion

Tuberculosis (TB) is one of the life-threatening communicable diseases across the world. The World Health Organization had declared it as a global emergency. [13] Major portion of the global TB burden (56%) is represented by South East Asia and Western Pacific regions. Among these, India itself accounts for one-fourth of the cases. [14] Abdominal TB constitutes 12% of all extrapulmonary TB cases and is one of the most common forms of extrapulmonary TB. [15] Authors have reported increase in number of cases in both in developing and developed countries. [16] In India, 550,000 deaths happen due to TB each year. [17] Hippocrates discovered the first documented link between tuberculosis and gastrointestinal symptoms in the 5th century BC, when he noted that diarrhoea in a person with phthisis was a fatal symptom. [18] Tuberculosis is a big concern, especially in developing countries, accounting for 7-10 million new cases and 6% of global fatalities each year. [19] Despite continuous efforts to combat tuberculosis (TB), it continues to be a major health problem in impoverished nations like India, where fatalities due to TB accounting for 50/100,000 people. [19]

It was noted that out of 100 patients, 43 (43%) were in the age range 15-30 years, followed by 27 (27%) in the age group 46-60 years, and 18 (18%) in the age group 61-75 years. Abro et al found that the age ranged from 10-56 years, with majority

(33.3%) of patients belonging to 3rd decade. [20] There were 32 females and 28 males with a male to female ratio of 1.4:1 respectively. Bali et al found that the youngest and the oldest patient in the study group were 13 years old boy and a 73 years old lady, respectively. [21] The average age was 44.76 ± 17.43 years. Most common presentation was abdominal pain followed by vomiting, distension and constipation. Out of the 70 patients, 58% were female. Intraoperatively, it was found that 42 patients had stricture, 32 patients with perforation, and 14 patients with adhesion. Intraoperatively, it was found that 42 patients had stricture, 32 patients with perforation, and 14 patients with adhesion. Based on location of pathology it was found that terminal ileum was involved in 49 cases (49%). Ileocaecal junction illness affected 38 patients (38%), while proximal bowel disease affected 13 patients (13%). Chalya et al found that the site of abdominal TB involvement was intestinal in 127 (49.6%), peritoneal in 106 (41.4%), nodal in 10 (3.9%) and solid viscera in 7 (2.7%) patients. [22] Bali et al found that the commonest intra-operative finding encountered was ileal perforation found in 23 (30.3%) of the patients followed by, in order of decreasing frequency, multiple small bowel perforation in 14 (18.4%), solitary stricture of the small bowel with perforation in 9 (11.8%), ileocecal mass in 9 (11.8%), adhesions or bands in 7 (9.2%), single or multiple strictures in 5 (6.6%), stricture with impending small bowel perforation in

5 (6.6%) and jejunal perforation in 4 (5.3%) patients. [23]

Conclusion

Abdominal TB is a major public health problem that poses a diagnostic difficulty that necessitates a high index of clinical suspicion. In this region, the disease is characterized by young age at presentation, delayed manifestation, poverty, and high morbidity and mortality. The final diagnosis can be made only after tissue diagnosis in most patients of abdominal TB hence taking a biopsy must be kept in mind while operating a patient where tuberculosis is suspected. These issues must be addressed in order to provide the best possible treatment for these individuals. This study is helpful in providing an insight to the disease pathology and the variety of presentations of abdominal tuberculosis and suggested the type of treatment that can be undertaken for variety of patients. The key to an early and successful diagnosis of abdominal tuberculosis is extreme monitoring in patients with abdominal symptoms and providing selective and specific management in each case based on individual findings is beneficial in providing successful results in patients of tuberculosis.

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