

INCIDENCE AND MANAGEMENT OF TUBERCULOSIS IN INTESTINAL OBSTRUCTION

**1. Dr. Md. Hafeez Shaik., Assistant Professor, Dept of General Surgery, GMC, GGH,
Kadapa**

**2. Dr. B. Jayakiran., Assistant Professor, Dept of General Surgery, GMC, GGH,
Kadapa**

**3. Dr. K.V. Madhusudhan., Assistant Professor, Dept of General Surgery, GMC, GGH,
Kadapa**

**4. Dr. M.V. Ramana Reddy., Assistant Professor, Dept of General Surgery, GMC, GGH,
Kadapa – Corresponding Author**

**Corresponding Author Address: Dr. M.V. Ramana Reddy DD MS 20/203, MDO office
Road, Jammalamadugu, Kadapa district, 516434**

ABSTRACT:

INTRODUCTION: Tuberculosis has been declared a global emergency by the World Health Organization (WHO) and is the most important communicable disease worldwide. The disease may involve any system of the body but abdomen is one of the commonest sites of involvement after lungs. Most patients with abdominal TB can be treated with anti TB therapy alone but some may require surgery to relieve the obstruction either by stricturoplasty or resection and anastomosis. **AIM AND OBJECTIVES:** To observe the incidence of Intestinal Tuberculosis among all the cases presenting to the acute surgical care, Osmania General Hospital as intestinal obstruction, various modes of management and outcome among these cases. **MATERIALS AND METHODS:** A retrospective study of 41 patients presenting to the acute surgical care unit of the upgraded department of General Surgery of Osmania General Hospital, Hyderabad, with Intestinal Obstruction due to Tuberculosis, from 2011 to 2014. The main inclusion criteria being the histopathological positivity of the specimen for tuberculosis. All cases of TB Peritonitis, Perforation due to TB have been excluded. **RESULTS & CONCLUSION:** Bowel obstruction resulting from intestinal tuberculosis is one of the most common abdominal surgical emergencies and contributes significantly to high morbidity and mortality. Young age at presentation, delayed presentation and high morbidity and mortality are among the hallmarks of the disease. A high index of suspicion, proper evaluation and therapeutic trial in suspected patients is essential for an early diagnosis and timely definitive treatment, in order to decrease the morbidity and mortality associated with this disease.

KEYWORDS: Abdominal tuberculosis, Bowel Obstruction, Bowel perforation, Anti Tubercular Therapy

INTRODUCTION

Tuberculosis has been declared a global emergency by the World Health Organization (WHO) and is the most important communicable disease worldwide. Approximately one third of the world population is infected and about three millions die each year from this disease.¹ It remains the principal cause of death in the developing countries², probably due to poverty, lack of education, low detection rate, nonavailability of experienced staff and insufficient coverage of the community by immunization programme. The incidence of tuberculosis' is again on the rise in developed countries, due to the influx of immigrants from third world countries, HIV infection and increasing use of Immunosuppressive therapy³. The disease may involve any system of the body but abdomen is one of the commonest sites of involvement after lungs⁴. Though potentially curable, abdominal tuberculosis continues to be a major cause of morbidity and mortality. In the abdomen, tuberculosis may affect the gastro-intestinal tract, peritoneum, lymph nodes, and solid viscera.

Intestinal tuberculosis has usually one of the three main forms i.e.ulcerative, hypertrophic or ulcerohypertrophic, and fibrous stricturing form⁵. The disease can mimic various gastrointestinal disorders, particularly the inflammatory bowel disease, colonic malignancy, or other gastrointestinal infections⁶. Most Patients have a chronic presentation but may present late with complications like sub acute and acute obstruction and sometimes presents with a palpable mass as shown by Anuradha⁷ or strictures as shown by Kapoor⁸, Ahmed⁷ and Gondal¹⁰. Constitutional Symptoms may or may not be present⁸. Microbial diagnosis is difficult in intestinal TB. Histopathology and radiology is the mainstay of diagnosis.

Most patients with abdominal TB can be treated with anti TB therapy alone but some may require surgery to relieve the obstruction either by stricturoplasty or resection and anastomosis. Patients with acute abdomen require emergency laparotomy. Patients with patent strictures respond to conservative management and patients with intestinal obstruction, strictures or masses usually require surgery.

AIM AND OBJECTIVES

To observe the incidence of Intestinal Tuberculosis among all the cases presenting to the acute surgical care, Osmania General Hospital as intestinal obstruction, various modes of management and outcome among these cases.

MATERIALS AND METHODS

This is a retrospective study of 41 patients presenting to the Acute Surgical Care Unit of Department of General Surgery of Osmania General Hospital, Hyderabad, with Intestinal Obstruction due to Tuberculosis, from 2011 to 2014. The patients have been selected from all age groups. The main inclusion criteria being the histopathological positivity of the specimen for tuberculosis. All cases of TB Peritonitis, Perforation due to TB have been excluded. All the patients have been subjected to preliminary investigations: Hemogram, Chest X-ray PA view, Erect abdominal X-ray, Ultrasonogram of abdomen, Sputum examination for AFB, Mantoux test. The various clinical presentations have been analysed and studied. The patient was managed according to the mode of presentation as Acute intestinal obstruction or Sub-acute intestinal obstruction. Colonoscopy was done for all the patients planned for conservative management. All the patients were given ATT post operatively.

RESULTS:

**Table No 1: PRESENTING COMPLAINTS
(SYMPTOMATOLOGY) & SIGNS**

Complaint	No. of Patients	Percentage
Pain abdomen	41	100
Distension	28	68.2
Vomiting	37	90.2
Constipation	32	78.0
Fever	24	58.5
Weight loss	33	80.48
Cough	16	39.02
Night sweats	6	14.6
Fatigue	19	46.34
Diarrhea	3	7.31
Hemoptysis	0	0
RIF Tenderness	11	26.8
Generalized Tenderness	18	43.9
Guarding	0	0
Distension	28	68.2

Table No 2: X-RAY FINDINGS

CHEST X-RAY		ERECT ABDOMEN	
Changes	No. of Pt.	Changes	No. of Pt.
Consolidation	4	Air fluid levels	33
Infiltrates	4		
Cavity	5	Dilated bowel loop	7
Effusion	4		
Normal	24	Normal	1

DURATION OF PAIN: The majority of our patients had symptoms of 3-4 weeks duration at the time of presentation. The reasons for late presentation in this study may be attributed to the fact that the diagnosis of intestinal TB in its initial stages is usually difficult due to vague and non-specific symptoms as a result patients remain undiagnosed for prolong periods, receiving symptomatic treatment and subsequently present late with complications such acute or sub-acute intestinal obstruction. 12 patients were on ATT.

MANAGEMENT: 24 (58.5%) cases were taken up for surgery on emergency basis, 7 (17.1%) were taken on elective surgery and 10 cases (24.4%) were managed conservatively

Table No 3: INTRAOPERATIVE FINDINGS

Findings	Patients	Percentage
Adhesions	22	70.96
Strictures	10	32.25
Tubercles	9	29.03
Mes. thickening	25	80.64
Lymph nodes	25	80.64
Ileo-caecal mass	6	19.34
Fluid	15	48.38

Table No 4: ADHESIONS

Adhesions	Patients	Percentage
Stricture	4	18.18
Mesenteric thickening	16	72.72
Lymph nodes	19	86.36
Tubercles	9	40.9
Ileo-caecal mass	3	13.6
Gangrene	3	13.6
Volvulus	0	0

Table No 5: OPERATIVE PROCEDURES

Procedure	Patients	Percentage
Adhesionolysis	14	45.16
Strictureplasty	5	16.12
Resection with end-to-end anastomosis	7	22.58
Resection with end ileostomy	1	3.22
Ileo-transverse anastomosis	4	12.9
Rt. Hemicolectomy with ileostomy	2	6.45

Table No 6: RESECTIONS

Procedure	Patients	Percentage
Small Bowel	8	80
a. For strictures	5	50
b. Gangrenous bowel	3	30
Rt. Hemicolectomy	2	20
Limited resections	0	0
	10	

Table No 7: ANASTOMOSIS

Procedure		Patients
Anastomosis following Resections	Entero-enteric	6
	Entero-colic	1
Anastomosis as a bypass	Entero-enteric	0
	Entero-colic	4

Table No 8: POST OP COMPLICATIONS

Complications	Patients	Management
Surgical site infection	11	Conservative
Enterocutaneous fistula	3	Conservative
Burst abdomen	1	Tension suturing
Pulmonary complications	1	-

Table No 9: HOSPITAL STAY

Duration	Patients	Percentage
0-7 days	9	21.95
8-14 days	19	46.34
15-30 days	10	24.39
31-50 days	2	4.87

MORTALITY: In the present study, only 1(2.43 %) patient died in the immediate postoperative period due to fecal peritonitis and septic shock.

DISCUSSION

Table No 10: TUBERCULOSIS AS THE CAUSE OF BOWEL OBSTRUCTION

Present study	Phillip et al¹¹	Arshad et al	Ali et al¹²
14%	22.4 %	24%	21.8 %

Table No 11: AGE & SEX INCIDENCE

Age	Present study	Phillip et al	Arshad et al	Iqbal et al ⁶
Range	12-60 yrs	11 -67 yrs	13-74 yrs	8-70 yrs
Mean	31.78 yrs	26 yrs	43.08 yrs	25 yrs
Male	53.7 %	64.4%	74%	33.3 %
Female	46.3 %	35.6%	26%	66.6 %
Ratio	1.15:1	1.8:1	2.8:1	1:2

Intestinal tuberculosis, like tuberculosis elsewhere in the body affects the young people at the peak of their productive life. This fact is reflected in my study as the highest incidence of the patients was in the 2nd and 3rd decades of life and more than 75% of the patients were aged below 40 yrs. The presentation of tuberculous intestinal obstruction in this age group has serious impacts on the national economy and production, as working and productive class of community is replaced by sick and ill individuals. The study showed that males were slightly more affected than females with a male to female ratio of 1.15:1 which is comparable to other studies^{11,13}

Table No 12: SYMPTOMATOLOGY

Symptom	Present study	Phillip et al	Iqbal et al
Pain abdomen	100%	100%	100%
Vomiting	90.2 %	98 %	80%
Constipation	78%	86%	-
Distension	68.2 %	62%	-
Fever	58.5 %	72%	40%
Weight loss	80.4 %	80%	20%
Diarrhea	7.3 %	25 %	-

The clinical presentation of tuberculous intestinal obstruction in our patients is not different from those in other studies^{11,14} with abdominal pain being common to all the patients. The clinical presentation of abdominal TB is usually non-specific and, therefore, often results in diagnostic delay and hence the development of complications such as intestinal obstruction.

PAST HISTORY OF TUBERCULOSIS: In my study, associated pulmonary tuberculosis was found in 29.2% of cases, a figure which is comparable with Phillip et al 23.7% .

Table No 13: CLINICAL PRESENTATION, MANAGEMENT, INTRA OP FINDINGS

Presentation	Present study	Phillip et al	Iqbal et al
Acute obstruction	59%	51.5 %	12.5%
Sub-acute obstruction	41 %	28.8 %	87.5 %
Emergency	58.5 %	58.5 %	
Elective	17.1 %	41.5 %	
Conservative	24.3 %	-	
Small bowel strictures	32.25 %	72.9 %	
Bands/ adhesions	70.96 %	16.9%	
Ileo-caecal mass	19.34%	3.4%	
Mes. lymph nodes	80.64 %	1.7%	

In my study, adhesions and bands were the major findings, this is in sharp contrast to the study compared , where strictures were more common. This is due to the early suspicion of intestinal tuberculosis, early intervention and early post-operative chemotherapy which has controlled further spread of the disease, whereas in other study majority were late presentations.

But as far as the site of pathology is concerned, it was terminal ileum followed by closely followed by the ileo-caecal region, which is comparable to other studies. This is possibly because of the increased physiological stasis, increased rate of fluid and electrolyte absorption, minimal digestive activity and an abundance of lymphoid tissue at this site. It has been shown that the M cells associated with Peyer’s patches can phagocytes BCG bacilli. The frequency of bowel involvement declines as one proceeds both proximally and distally from the ileocaecal region.

Table No 14: SURGICAL PROCEDURE

Procedure	Present study	Phillip et al
Adhesionolysis	45.16%	16.9%
Strictureplasty	16.12%	1.8%
Resection with end to end anastomosis	22.58 %	23.7%

Ileostomy	9.67 %	1.8%
Right hemicolectomy	6.45 %	55.9 %

In my study, adhesionolysis was the most performed procedure whereas right hemicolectomy was more common in the other study. This goes with the intraoperative findings.

Table No 15: POST-OPERATIVE COMPLICATIONS & HOSPITAL STAY

Complication	Present study	Phillip et al
Surgical site infection	68.75 %	42.9 %
Enterocutaneous fistula	18.75%	10.7%
Burst abdomen	6.25 %	7.1 %
Pulmonary complications	6.25 %	-
Hospital Stay Range	2-60 days	1-64 days
Hospital Stay Median	12 days	24 days

In my study, the mortality was 2.43% and is lower than Phillip et al 28.8% , for the same reasons mentioned above.

CONCLUSION

Bowel obstruction resulting from intestinal tuberculosis is one of the most common abdominal surgical emergencies and contributes significantly to high morbidity and mortality.

Young age at presentation, delayed presentation and high morbidity and mortality are among the hallmarks of the disease.

A high index of suspicion, proper evaluation and therapeutic trial in suspected patients is essential for an early diagnosis and timely definitive treatment, in order to decrease the morbidity and mortality associated with this disease.

BIBLIOGRAPHY

1. World Health Organization Bulletin in Epidemiology of Tuberculosis,2002.
2. Suri S, Gupta S. CT scan in Abdominal Tuberculosis. Br J Radiol 1999; 72: 92-98.
3. Sharp JF, Goldman M. Abdominal Tuberculosis in East Brimingham, a 16 years study, Postgrad Med J 2002; 63: 539-42.
4. Khan MR, Khan IR, Pal KNM. Diagnostic issues in Abdominal Tuberculosis, J Pak Med Assoc 2001; 51(4): 138-140.

5. Engin G, Balk E. Imaging findings of Intestinal Tuberculosis. J Comput Assist Tomogr 2005 Jan-Feb; 29(1): 37-41.
6. Rita S. Diagnosis of Abdominal Tuberculosis. Role of imaging. J Ind Acad Clin Med 2001 July-Sept; 2(3): 103-04.
7. Anuradha B, Apama S, Hari S P V, Vijaya L V, Akbar Y, Suman LG, Murthy K J. Prevalence of drug resistance under the DOTS strategy in Hyderabad, South India, 2001-2003, Int J Tuberc Lung Dis 2006; 10(1): 58-62.
8. Kapoor VK Abdominal TB Postgrad Med J 1998; 74: 459-67.
9. Ahmed M, Maingal M A. Pattern of mechanical intestinal obstruction in adults. J Coll Physicians Surg Pak 1999; 9: 441-3.
10. Gondal K M, Khan A F A. Changing Pattern of abdominal tuberculosis Pak J Surg 1995; 11: 109-13.
11. Tuberculous bowel obstruction: Phillip L Chalya, Mabula D Mchembe, Stephen E Mshana, Peter Rambau, Hyasinta Jaka, Joseph B Mabula: world journal of emergency surgery. 2013; 8: 12.
12. Ali N, Hussein M, Israr M: Tuberculosis as a cause of small bowel obstruction in adults. Gomal journal of medical sciences 2011, 9:233-235.
13. Pattern of acute intestinal obstruction: Arshad M Malik, Madiha Shah, Rafique Pathan, Krishan Sufi,: Saudi J Gastroenterol. 2010 October; 16(4): 272-274. 74
14. Tahir Iqbal, Ashraf Khan, Asif Iqbal, Farah Tahir: obstruction due to intestinal tuberculosis strictureplasty versus resection anastomosis: Pak Journal of Sur; vol 24, issue 3, 2008: 177-181 76