



PREVALENCE OF INTESTINAL TUBERCULOSIS IN CASES OF ACUTE ABDOMEN AT VMMC & SAFDARJUNG HOSPITAL, NEW DELHI

General Surgery

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ABSTRACT

Objective: To determine the prevalence of Intestinal Tuberculosis in cases of Acute abdomen.

Design & Duration: A randomized prospective study from August 2019 to July 2020.

Setting: Department of Surgery, VMMC & Safdarjung Hospital, New Delhi.

Patients: A total number of 200 patients with Acute Abdomen, who presented as intestinal obstruction or peritonitis.

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

Results: Among the 200 patients with acute abdomen, 32 (16%) had Intestinal Tuberculosis on the basis of operative findings and histopathological reports. Age of the patients ranged between 15 to 65 years; majority (75%) were in the age group of 20 to 40 years. Male to female ratio was 1:0.45. Twelve (37.5%) patients had evidence of Pulmonary Tuberculosis as well on X-ray chest. The commonest operative findings were hyperplastic ileocaecal tuberculosis (34.3%), followed by strictures (25%), and perforations (25%). The overall mortality in cases of acute abdomen was 6% and among tubercular patients 9.3%.

Conclusion: Intestinal Tuberculosis is a common problem presenting to general surgical units in the developing countries, often in an acute form. A high index of suspicion, proper evaluation and therapeutic trial in suspected patients is essential for an early diagnosis, in order to minimize complications.

KEYWORDS

Intestinal Tuberculosis, Acute Abdomen, Intestinal Obstruction, Peritonitis, Koch's Abdomen

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. It remains the principal cause of death in the developing countries, probably due to poverty, lack of education, low detection rate, non-availability 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 Immuno-suppressive therapy.

The disease may involve any system of the body but abdomen is one of the commonest site of involvement after lungs. 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 form¹. The disease can mimic various gastrointestinal disorders, particularly the inflammatory bowel disease, colonic malignancy, or other gastrointestinal infections.

It usually runs an indolent course and presents late with complications especially acute or sub-acute intestinal obstruction due to mass (tuberculoma) or stricture formation in small gut and ileocaecal region or gut perforation leading to peritonitis. Inspite of advances in medical imaging, the early diagnosis of abdominal tuberculosis is still a problem and patients usually present when complications had occurred.

This study was carried out to find out the prevalence of Intestinal Tuberculosis in cases of Acute Abdomen, presenting as intestinal

obstruction/peritonitis. We can minimize these fatal complications by early diagnosis and timely treatment of the cases.

MATERIAL AND METHODS

This randomized prospective study was conducted at Department of Surgery, VMMC & Safdarjung Hospital, New Delhi from August 2019 to July 2020 on 200 patients with various patterns of intestinal obstruction and peritonitis. Patients of abdominal trauma both blunt and penetrating were excluded from the study. Patients were mostly admitted in emergency through the Casualty department. Some of the patients were referred and shifted from other units and hospitals.

A specially designed proforma was filled in for each patient. Assessment of the patients was done by a detailed history and clinical examination. Investigations including Complete Blood Count and ESR, Serum Electrolytes, Urea, Creatinine and Blood Sugar were done. X-ray Chest and plain X-ray abdomen, erect and supine including both domes of the diaphragm, and Ultrasound of the abdomen were also performed. Blood was arranged after grouping, cross matching and the screening.

All patients were initially resuscitated by:

- Correction of fluid and electrolytes imbalance.
- Insertion of nasogastric tube.
- Broad spectrum antibiotics and analgesics.

Table I. Age Distribution In Acute Abdomen

Age Group in yrs.	Number	Percentage (%)
11-20	44	22.0
21-30	56	28.0
31-40	39	19.5
41-50	29	14.5
51-60	20	10.0
61-70	10	5.0

>70	2	1.0
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Patients presenting in a critical condition were treated with vital system support by :

- Administration of Oxygen.
- Inj. Dopamine and Dobutrax infusion when found hypotensive and oliguric despite adequate fluid replacement.

After initial optimization and anesthetist's opinion, the patients were operated. Final diagnosis and postoperative treatment was dependent on the operative findings and histopathological confirmation. Those found to be tuberculous were started on anti-tuberculosis therapy.

RESULTS

A total number of 200 patients with acute abdomen were included in this study. Their ages ranged from 11 to 75 years with a mean age of 35.6 years. Majority of the patients were seen between 11 to 30 years of age (Table I). There was male predominance, the male to female sex ratio being 1:0.56. Most (89%) patients were admitted in emergency through Casualty department, the rest (11%) were referred from other departments. Majority of the patients belonged to poor and lower middle class groups. Their symptoms and signs are shown in Table II and III respectively.

Out of 200 cases, 80 had Acute Intestinal Obstruction and 120 peritonitis, on the basis of clinical examination and radiological findings. After resuscitative measures surgery was performed in all patients through midline incision. The operative findings and causes are depicted in Table IV. The commonest causes found were ileal, appendicular, duodenal and gastric perforations followed by adhesions, obstructed herniae, intestinal growths and volvulus.

Table II. Symptoms In Acute Abdomen

Symptoms	Number	Percentage (%)
Abdominal pain	200	100.0
Abdominal distension	162	81.0
Constipation	132	66.0
Vomiting	112	56.0
Borborygmi	38	19.0
Diarrhea	32	16.0
Fever	110	55.0
Weight Loss	42	21.0
Cough	21	10.5
Night sweats	18	9.0

Table III. Abdominal Signs In Acute Abdomen

Sign	Number	Percentage (%)
Abdominal distension	162	81
Abdominal tenderness	182	91
Rigidity	98	49
Abdominal mass	8	4
Ascites	78	39
Visible peristalsis	8	4
Absent bowel sounds	102	51
Increased bowel sounds	34	17

Amongst all the cases of acute abdomen, 32 patients had intestinal tuberculosis on the basis of operative findings and histopathological reports. Majority belonged to the poor socioeconomic class. Their ages ranged between 16 to 65 years, majority (75%) were between 20 to 40 years of age. Twenty two patients were male and 10 female; the male to female ratio being 1:0.45.

Among 32 patients of intestinal tuberculosis, 12 (37.5%) were having evidence of pulmonary tuberculosis on X-ray Chest and 26 (81.25%) had a raised ESR. Eight patients (25%) 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.

Operative findings and sites of involvement of intestinal tuberculosis are shown in Table V. The commonest surgical procedure performed was right hemicolectomy, followed by segmental resection and anastomosis, ileostomy, primary repair and strictureplasty respectively. Final diagnosis of intestinal tuberculosis was obtained solely after histopathological reports and anti-tuberculosis therapy started postoperatively for one year.

The average hospital stay amongst all the patients was 7.76 days,

minimum stay being two and maximum 32 days (due to complications). Overall, 122 patients (61%) recovered without complications, 64 (32%) developed complications (Table VI) and two (1%) left against medical advice (LAMA) after surgery. Twelve (6%) patients died in this series. Out of these, seven patients died of septicemia because of late presentation with perforation and faecal contamination (two in this group died within 48 hours postoperatively), two because of cardiac problem and one due to severe chest complication. Amongst these 12 dead cases, three were found to have tuberculosis on histopathology. These presented with peritonitis and were septicemic with malnutrition; two patients had associated pulmonary tuberculosis as well.

Table IV. Causes Of Acute Abdomen

Causes	Number	Percentage (%)
Ileal perforation	37	18.5
Appendicular perforation	34	17.0
Duodenal perforation	25	12.5
Gastric perforation	13	6.5
Postoperative adhesions	13	6.5
Obstructed inguinal hernia	15	7.5
Colorectal growth	10	5.0
Ileocaecal mass	11	5.5
Intestinal stricture	8	4.0
Plastic abdomen (frozen)	4	2.0
Sigmoid volvulus	12	6.0
Miscellaneous	18	9.0

Table V. Operative Findings In Cases Of Intestinal Tuberculosis (n=32)

Findings	Number	Percentage (%)
Ileocaecal hyperplastic Tuberculosis	10	31.25
Ileocaecal hyperplastic Tuberculosis with perforation	1	3.12
Single ileal perforation	6	18.75
Multiple ileal perforations	2	6.25
Single stricture	2	6.25
Multiple strictures	6	18.75
Frozen (Plastic abdomen) i.e. Multiple adhesions between bowel loops and abdominal wall	4	12.50
Acute Tuberculous peritonitis	1	3.12
Total	32	100.00

Table VI. Postoperative Complications (n=200)

Complications	Number	Percentage (%)
Wound Infection	26	13.0
Burst abdomen	4	2.0
Anastomotic leakage	3	1.5
Intraabdominal collection	3	1.5
Chest complication	12	6.0
Cardiac complication	3	1.5
Septicaemia	7	3.5
Malnutrition	4	2.0
Renal failure (uraemia)	2	1.0
Total	64	32.0

DISCUSSION

Tuberculosis has re-emerged as a devastating disease during the last decade with a high morbidity and mortality. India is among those five nations that account for more than 50% of tuberculous cases worldwide. The disease is considered to be the fifth major cause of all deaths in India, and the a common cause of intestinal obstruction.

Abdominal Tuberculosis can affect any age group but is more common in adolescence. The ages of the patients in this study ranged from very young to very old, majority were in between 20 to 40 years, which is consistent with other studies also. The male to female ratio in this study is 1:0.45, as opposed to other series which report slight female predominance.

Amongst 32 patients, 12 (37.5%) were associated with pulmonary tuberculosis on X-ray chest. Other authors quote figures of 7% and 40 % in this regard. Twenty-six (81.25%) patients had a raised ESR, which is consistent with results of other studies as well.

In this study of 32 cases of intestinal tuberculosis, 22 (68.75%) presented with acute intestinal obstruction and 10 (31.25%) with

peritonitis. Hyperplastic ileocaecal tuberculosis was the commonest operative finding in 11 (34.3%) cases, followed by intestinal strictures (single or multiple) in 8 (25%) cases, intestinal perforation in 8 (25%) and frozen abdomen (Plastic abdomen) in 4 (12.5%) patients. In other studies frozen abdomen and strictures were the commonest findings.

Various surgical procedures performed were right hemi-colectomy in 10 (31.25%) patients, followed by segmental resection and anastomosis, strictureplasty, ileostomy, and adhesiolysis. Similar findings were recorded by other writers also. Anti-tuberculous therapy was prescribed in all the tubercular patients postoperatively.

In this study three patients with intestinal tuberculosis died, out of 32 giving a mortality of 9.38%. All presented late with intestinal perforation and peritonitis, two had associated pulmonary tuberculosis. Different studies quote a mortality rate associated with gut perforation ranging from 11% to 45%.

The overall mortality rate in this study was 6% among 200 patients that presented with intestinal obstruction/peritonitis, which is less as compared to the other studies. This is probably due to enthusiastic resuscitation and thorough peritoneal toilet with normal saline and pyridine.

CONCLUSION

Intestinal tuberculosis is one of the major causes of morbidity and mortality in the developing countries. It mostly present as acute abdomen with the signs and symptoms of intestinal obstruction or perforation.

A high index of suspicion, proper evaluation, and therapeutic trial in suspected patients is essential for an early diagnosis and timely treatment, in order to decrease the prevalence of complications.

REFERENCES

1. Agarwal P, Malpure S, Raja Shankar S, et al. Surgical treatment of Abdominal Tuberculosis: A review of 50 cases. *Bombay Hosp J* 1999; 41.
2. Boukthir S, Murad SM, et al. Abdominal Tuberculosis in children. *Acta Gastroenterol Belg* 2004 Jul-Sept; 67(3): 245-9.
3. Engin G, Balk E. Imaging findings of Intestinal Tuberculosis. *J Comput Assist Tomogr* 2005 Jan-Feb; 29(1): 37-41.
4. Kawaba FN. Abdominal tuberculosis: A study of 881 cases. *J R Coll Surg Edin* 2013; 38(5): 293.
5. Ministry of Health, Govt. of India. National Tuberculosis Control Programme 2018-19, New Delhi: Ministry of Health, Govt. of India; 2016, p.2-6.
6. Rita S. Diagnosis of Abdominal Tuberculosis. Role of imaging. *J Ind Acad Clin Med* 2001 July-Sept; 2(3): 103-04.
7. Sharp JF, Goldman M. Abdominal Tuberculosis in East Brimingham, a 16 years study. *Postgrad Med J* 2012; 63: 539-42.
8. Sial K, Baloch Q. Presentation and surgical management of Abdominal Tuberculosis. *Med Channel* 2004 Oct-Dec; 10(4): 20-22.
9. Sircar S, Taneja VA, Kausra V. Epidemiology and clinical presentation of Abdominal Tuberculosis, a retrospective study. *J Indian Med Assoc* 1996; 94(9): 342-4.
10. Suri S, Gupta S. CT scan in Abdominal Tuberculosis. *Br J Radiol* 2019; 72: 92-98.
11. World Health Organization Bulletin in Epidemiology of Tuberculosis, 2018.