



## INCIDENCE OF ABDOMINAL TUBERCULOSIS IN PATIENTS PRESENTING WITH PAIN ABDOMEN

### General Surgery

**Dr. Pankaj Prasad Verma**

Post Graduate Trainee, Department of General surgery, RIMS, Ranchi.

**Dr Manjar Ali**

Post Graduate Trainee, Department of General surgery, RIMS, Ranchi.

**Dr Sanjay Singh\***

Post Graduate Trainee, Department of General surgery, RIMS, Ranchi. \*Corresponding Author

**Prof (Dr.) Vinay Pratap**

Professor, Department of General surgery, RIMS, Ranchi.

### ABSTRACT

Tuberculosis is a major health problem worldwide and in India continues to be responsible for considerable morbidity and mortality despite tremendous effort made in diagnosis, prophylaxis and therapy. The disease may involve any system of body but abdomen is one of the commonest site of involvement after lungs. This study is carrying to find out Incidence of Abdominal Tuberculosis in patients of pain abdomen presenting as acute/chronic cases. The present study was carried out in the Department of Surgery, Rajendra Institute of Medical Sciences, Ranchi, from April 2018 to September 2019. The total number of cases selected disease remains early detection. A continual awareness on the part of the clinician of the possibility of abdominal Tuberculosis in many patients with obscure abdominal symptoms should avoid errors and aid in the detection of a condition, which if treated early, not only produces remarkable remission and relief on the part of for this study was 1800. According to the presentation, the patients were clinically divided into 2 broad groups: those who were admitted as acute emergencies and those who came with a chronic presentation. From these two groups 100 cases were fall in our inclusion criteria. Of these 100 patients, most were in their third or fourth decades of life, and females were approx two times more commonly affected as their male counterparts, maintaining an approximate ratio of 1.86:1. Thus we had a 5.55 % incidence of abdominal Tuberculosis in this series. The development of cheap and efficient procedures for early diagnosis remains one of the practical problems to battle this disease, because the only way to decrease morbidity and mortality of this the patients but also takes unnecessary burden off the health care services.

### KEYWORDS

abdominal tuberculosis, pain abdomen, incidence

### INTRODUCTION

Tuberculosis is a major health problem worldwide. Approximately one third of the world population is infected and about three millions die each year from this disease [1]. It remains the major cause of death in the developing countries [2], probably due to poverty, lack of education, low detection rate, non-complains to anti-tuberculosis drugs and evolving of resistance to available antitubercular drugs. 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 immune-suppressive therapy [3].

Tuberculosis in India continues to be responsible for considerable morbidity and mortality despite tremendous effort made in diagnosis, prophylaxis and therapy. Therefore priority for its diagnosis and control assume great importance because magnitude of problem is still on increasing, causing considerable sufferings.

The disease may involve any system of body but abdomen is one of the commonest site of involvement after lungs [4]. In the abdomen, tuberculosis may affect gastro-intestinal tract, peritoneum, lymph nodes and solid viscera.

Intestinal tuberculosis has usually one of the three main forms i.e. Ulcerative, Hypertrophic, ulcerohypertrophic and fibrous structuring form [5]. The disease may mimic various gastrointestinal disorders, particularly the inflammatory bowel disease, colonic malignancy, or other gastrointestinal infection [6].

Abdominal tuberculosis runs an indolent course and present with complication 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 [7,8].

In spite of advances in medical imaging, laboratory testing the early diagnosis of abdominal tuberculosis is still a problem and patients usually present when complication had occurred.

This study is carrying to find out Incidence of Abdominal Tuberculosis in patients of pain abdomen presenting as acute/chronic cases, various forms of presentation, distribution amongs different age groups and

tried to correlate between various investigative procedures and clinical presentation to have a better insight into this disease.

### MATERIALS AND METHODS

The present study was carried out in the Department of Surgery, Rajendra Institute of Medical Sciences, Ranchi, from April 2018 to September 2019. All the patients who were selected for this study attended either the out patients department or the Emergency.

The total number of cases selected for this study was 1800. According to the presentation, the patients were clinically divided into 2 broad groups: those who were admitted as acute emergencies and those who came with a chronic presentation.

The first group comprises patients presented with chronic symptoms and their number was 950. Second group cases were selected from patients presented with acute symptoms and having 850 patients. From these two groups 100 cases were fall in our inclusion criteria. A large number of cases of this series presented with acute abdomen and were admitted through emergency. The presenting symptoms were various combinations of pain, constipation, abdominal distension, and vomiting with or without features of hypovolemic shock. They were urgently admitted as cases of acute abdomen. A detailed history and a thorough clinical examination of the abdomen including a per rectal examination and a thorough check of the other systems like Cardiovascular System, Central Nervous System, Respiratory Systems were done and was carefully noted. On an emergency basis Routine investigation and plain x-ray of the abdomen was done. Therefore preoperative diagnosis of the cause could not be done with certainty. After initial resuscitation, a thorough assessment was done and clinical progress noted. Those patients deemed unresponsive to conservative measures were put up for emergency exploratory laparotomy. The exact cause was noted, and tissue samples were taken for histopathological examination that was sent to the Department of Pathology. In the postoperative convalescing period and in those who responded to conservative measures, the patients were subjected to the following investigations.

- (1) Routine blood examination; hemoglobin estimation, total and differential count of white blood cells and erythrocytic

- sedimentation rate(ESR)
- (2) Estimation of blood glucose level
  - (3) Estimation of serum urea and creatinine
  - (4) sputum smear for acid fast bacilli in those with a history of cough
  - (5) Straight X-ray of the chest

The findings of these examinations were noted. The histopathological findings of biopsy samples were also listed. Following discharge those patients diagnosed with abdominal tuberculosis were closely monitored for follow-up.

The patients who presented with chronic symptoms were mostly seen or admitted through surgical OPD. Most had symptoms of longstanding vague colicky pain, occasional bouts of diarrhoea or diarrhoea alternating with constipation, with or without non-specific symptoms of low grade fever, night sweats, anorexia and loss of weight. Some of them presented with lump in the right iliac fossa with history of constipation of many months duration. The presenting signs and symptoms as elicited were chartered. A thorough history including past history of pulmonary tuberculosis and antitubercular drug therapy was taken and all other systems were carefully examined. Those patients who presented acutely and responded to conservative measures were subjected to similar protocol. The investigations undertaken for the purpose of reaching a diagnosis were as follows:

- (1) Hemoglobin estimation, total and differential count of white blood cells and erythrocytic sedimentation rate (ESR).
- (2) Estimation of blood glucose level
- (3) Estimation of serum urea and creatinine
- (4) In patients above the age of 25 years, E.C.G. to rule out cardiac ailments
- (5) Sputum smear for acid fast bacilli in patients with history of cough
- (6) Straight X-ray of the chest
- (7) Estimation of ascetic fluid Adenosine Deaminase Activity (ADA)
- (8) Barium meal follow through
- (9) Ultrasonography of the whole abdomen
- (10) CT scan of the abdomen

The cases were classified according to the dominant feature visible to the naked eye at operation- peritoneal involvement, mesenteric adenitis, intestinal involvement, or mixed features.

The provisional clinical diagnosis was confirmed by histopathological examination and AFB (Acid fast bacillus) smear staining of sputum and ascetic fluid, of the specimens taken at operation or by investigations, conducted in the Departments of Pathology and Microbiology respectively in Rajendra Institute of Medical Sciences, Ranchi.

**Among the materials sent for examinations was one or more of the following:**

- (1) Portion of resected gut./ gut wall
- (2) Mesenteric lymph nodes
- (3) Tissue from omentum
- (4) Peritoneal tubercles

## RESULTS AND ANALYSIS

Most of the cases (70%) in this series were between 21 and 40 years of age. The youngest was 10 years of age and the oldest was 85 years old. Female: Male ratio was 1.86:1, there being 35 males and 65 females.

**Table-1: Acute And Chronic Presentation**

TYPE OF PRESENTATION	NUMBER OF CASES	PERCENTAGE
Chronic presentation	56	56
Acute presentation	44	44
Acute de novo	33	33
Acute on chronic	11	11

44 patients came with acute symptoms and 56 patients came with chronic features.

Among the patients who presented acutely, in 33 (75%) out of them, the acute abdomen was the first manifestation of the disease process, whereas in the other 11 (25%) had a history of chronic abdominal pain of varying duration.

**Table-2: Type Of Acute Presentation**

TYPE OF ACUTE PRESENTATION	NUMBER OF CASES	PERCENTAGE
Intestinal obstruction	22	50
Perforation	10	22.73
Peritonitis due to ruptured mesenteric lymph node , peritoneal tubercle	12	27.27
Total	44	100

The acute group comprised of 22 cases (50%) of intestinal obstruction, 10 cases (22.73%) of perforation, 12 cases (27.27%) stimulating peritonitis.

**Table-3: Incidence Of Symptoms**

SYMPTOMS	NUMBER OF CASES	PERCENTAGE
Pain abdomen	100	100
Fever	42	42
Weight loss	78	78
Night sweat	32	32
Anorexia	92	92
Nausea/Vomiting	55	50
Cough	36	36
Diarrhoea	12	12
Diarrhoea alternating with constipation	42	42
Constipation	18	18

The commonest presenting symptom was abdominal pain, being complained of by 100 % cases. The other complaints were fever in 42%, weight loss in 78 %, night sweats in 32%, anorexia in 92%, nausea/ vomiting in 55%, cough in 36%, diarrhea in 12%, diarrhea with constipation in 42%, only constipation in 18%.

**Table-4: Incidence Of Physical Sign**

SIGN	NUMBER OF CASES	PERCENTAGE
Malnourished	84	84
Pallor	86	86
Abdominal distention	56	56
Visible peristalsis	22	22
Abdominal tenderness	40	40
Doughy abdomen	12	12
Rigidity	22	22
Liver dullness obliteration	10	10
Lump abdomen	15	15
Ascites	8	8
Peristaltic sound		
Exaggerated	60	60
Normal	22	22
Feeble or absent	18	18

84% cases were poorly nourished and pallor was present in 86 %. Among the other signs, abdominal distension in 60%, visible peristalsis in 22%, abdominal tenderness in 40%, doughy feel of the abdomen in 12%, rigidity in 12%, lump abdomen in 15%, and ascites in 8%. Obliteration of liver dullness was noted in 10%. Peristaltic sounds were exaggerated in case of obstruction, and were feeble or absent in case of perforation and peritonitis.

## USG OF THE ABDOMEN

Ultrasonography was carried out in all 56 of the chronic cases. There was normal study in 53.57% cases. 21.42% showed mesenteric lymphadenopathy, 14.28% showed fluid collection, 10.71% showed an abdominal lump

## CT-ABDOMEN

CT abdomen had been done in 6 patients out of 30 chronic cases in which USG abdomen finding were normal. Among them 2 had mesenteric nodes, 1 case had mesenteric stranding with omental thickening, 1 had only ascites and 2 cases showed growth arising from large gut.

## CHEST X-RAY FINDING

This was done in all acute and chronic cases. Thus by screening of

patients by chest X-ray, active lesions were found in 6%, healed foci in 12% and no lesion in 82%.

Thus chest X-ray evidence of associated pulmonary Tuberculosis, either active or healed, was therefore present in 18 % cases.

**Table- 5 : Ascitic Fluid Analysis**

Characteristics	Positive in number of cases	Percentage
Protein >2.5gm%	6	75
Serum ascetic albumin gradient <1.1	3	37.50
ADA level >40u/l	7	87.5
Leucocyte count >500 (Predominantly lymphocyte)	7	87.5
AFB Staining	0	0

8 patients were found with ascites out of 56 chronic cases. Among which 6 have total protein>2.5 gm%, 3 have SAAG <1.1, 7 have ADA >40u/l, and 7 have predominantly lymphocytes. None of them were found with AFB positive.

### HISTOPATHOLOGICAL FINDINGS

Tissues collected at the time of laparotomy and from patients having lump abdomen sent for histological studies. It was seen that all the exploratory- laparotomy patients with acute abdomen and 6 of those with chronic presentation had Type III histology. Type I and Type II histology were found in 5 and 4 of the chronic patients respectively.

### DISCUSSION

#### AGE AND SEX:

In this series, most of the patients diagnosed with Tuberculosis (70%) were between 21 and 40 years of age. This age incidence coincides with that reported by Muhammad Saleem Sheikh et al (2007). There were 65 females and 35 males with a female to male ratio of 1.86:1. Most of the reported series show a preponderance of the disease in females

#### PRESENTATION:

44% of the patients in this series came with acute symptoms, while 56 % came with chronic features. Ravinder Kumar et al (2017) had 46% acute and 54% chronic patients. The commonest cause of acute abdomen in this series was intestinal obstruction in 22% followed by perforation in 10% cases.

#### SYMPTOMS:

The most important presenting symptom in this series was abdominal pain, being complained of by 100% patients. The incidence of pain reported in other studies were as: Kadir Demir et al (2001) 92.3%, A R Miah et al (2011) 88.68% Jitendra Sankpal et al (2014)100%and Seema Awasthi, et al (2015) 100%. The incidence of other symptoms in this study were fever 42%, weight loss 80%, anorexia 92%, vomiting 44%, night sweats 32%, constipation 18%, diarrhea alternating with constipation 42%, diarrhea 12%, cough 39%. M.AL Muneef et al (2001) found fever 70%; weight loss 68%; abdominal swelling 67%; change in bowel habit 39%; anorexia 30%; and sweating 30%.

#### PHYSICAL SIGNS:

In the present series, 84% patients were poorly nourished and pallor was present in 86% cases. Jitendra Sankpal et al (2014) anaemia was noted in 69.31% patients. A higher incidence of undernourishment and pallor in this series could be due to the fact that this part of the country is socioeconomically lower than the rest of the country. The other clinical signs noted in this series were abdominal distension 56%, visible peristalsis 22%, abdominal tenderness 40%, rigidity 22%, obliteration of liver dullness in 10%, doughy feel of the abdomen 12%, abdominal lump 15%, and ascites 8%.

#### ULTRASOUND FINDINGS

USG features suggestive of intestinal TB are mesenteric thickness of 15 mm or more and an increase in the mesenteric echogenicity (from fat deposition) combined with mesenteric lymphadenopathy. Ultrasound features suggestive of Tuberculosis was found in only 26 of the 56 chronic cases in whom it was carried out.- mesenteric lymphadenopathy (12 cases), intraabdominal fluid(8 cases), abdominal lump (6 cases). There were normal findings in the rest 30.

M.AL Muneef et al (2001) abdominal USG findings were ascites 53.2%, bowel thickening 11.4% and normal in 17.2%

### CT SCAN FINDINGS

CT scan findings were carried out in 6 of the 30 cases who showed no abnormal features on ultrasonography.. Of the 6 cases, 2 had mesenteric nodes, 1 case had mesenteric stranding with omental thickening, 1 had only ascites and 2 cases showed growth arising from large gut. M.AL Muneef et al (2001) done CT abdomen for making diagnosis of tuberculosis and found ascites in 61%, peritoneal thickening in 39%, retroperitoneal node in 25% and small bowel/colon lesion in 8% cases.

### ASCITIC FLUID ANALYSIS

8 patients were found with ascites out of 56 chronic cases. Among which 6 have total protein>2.5 gm%, 3 have SAAG <1.1, 7 have ADA >40u/l, and 7 have predominantly lymphocytes in ascetic fluid analysis. None of them were found with AFB positive.

Tahiri Joutei Hassani Mohammed(2017) found that ascitic protein >30g/L, and total cell count of 500-1500/il, the cells are predominantly lymphocytes (>70%). However, ascitic fluid total protein levels <25 g/L can be seen when PT complicates cirrhosis<sup>6</sup>. A low serum-ascites albumin gradient (<11 g/L) is seen in 100% of patients with PT but its specificity remains low.

Mycobacterium detection is positive on smear in fewer than 3% of cases

### HISTOPATHOLOGY FINDING

The lesions found were grouped into 3 histological types (which from part of the histopathological spectrum of Tuberculosis) as follows :

- Type I : Chronic nonspecific granuloma
- Type II : Chronic nonspecific inflammation
- Type III : Epithelioid granuloma with caseation necrosis.

It was seen that all laparotomy cases of acute abdomen and 6 of those with chronic presentation had Type III histology. Type I and Type II histology were found in 5 and 4 of the chronic patients respectively.

### CONCLUSION

This study once again shows that Tuberculosis is not uncommon in our country. The development of cheap and efficient procedures for early diagnosis remains one of the practical problems to battle this disease, because the only way to decrease morbidity and mortality of this disease remains early detection. Highly sensitive and poorly specific tests are potentially harmful, not so much because unnecessary treatment is given, but because undiagnosed disease may be left untreated. A continual awareness on the part of the clinician of the possibility of abdominal Tuberculosis in many patients with obscure abdominal symptoms should avoid errors and aid in the detection of a condition, which if treated early, not only produces remarkable remission and relief on the part of the patients but also takes unnecessary burden off the health care services.

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