

# Clinical Study of Abdominal Tuberculosis

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**Abstract**— This is clinical study of 101 cases of abdominal tuberculosis admitted to tertiary care hospital during May 2010-November 2013. Majority of abdominal tuberculosis patients presented in 21-30yrs age and 11-20yrs age groups which were 34.65% and 21.78% respectively. Majority patients were females, which found to be 62(61.39%) patients, while male were 39(38.61%) patients. Ratio of male to female was 1: 1.59. Majority patients were from lower socioeconomic group i.e. 66(65.35%) patients. Most common complaint was abdominal pain, which in all i.e. 100% patients. Followed by next complaints were loss of weight and loss of appetite which were present in 77.23% and 73.27% patients. Past history of tuberculosis present in 8.91% patients. Most common sign was pallor which was present in 67.33 patients and abdominal tenderness, which was present in 39.60% of patients. Anaemia, was found 69.31% patients. Mantoux test was positive in 25.74% patients and ESR was raised in 67.33% patients. X ray chest showed positive finding of tuberculosis in 24.25% of patients. HIV was reactive in 4.95% of patients. Biopsy and CT abdomen pelvis has maximum sensitivity of 100%. In all ascites patients Ascites ADA level was increased. Surgical Management was done in 66.34% patients and 33.66% managed with chemotherapy alone. Most common surgical procedure was resection and anastomosis done in 26.87% of patients, followed by right hemicolectomy done in 23.88% patients. Diagnostic laparoscopy was done in 16.42% of patients. Most common operative finding was Ileocaecal mass. Most common complication was wound infection. Mortality occurred in 1.49% of patients. In follow up 80% patients completed 6 months of AKT and 20% were on AKT.

**Index Terms**— Minimum Abdominal Kochs, intestinal obstruction, strictures, hemicolectomy, diagnostic laparoscopy,

## 1 INTRODUCTION

Tuberculosis caused by *Mycobacterium tuberculosis* is a disease of great antiquity and for a long time it has maintained its evil reputation and being one of the greatest killer diseases of the mankind. Tuberculosis detected as far back as 10000 BC, still remain a major public health problem worldwide<sup>1</sup>.

Tuberculosis causes ill health among millions of people each year and rank second leading cause of death from infectious diseases worldwide, after human immunodeficiency virus (HIV). According to WHO in 2011, there were estimated 8.7 million new cases of tuberculosis and 1.4 million people died from tuberculosis worldwide<sup>2</sup>. India alone contributes 26% of this new TB cases. Because of the growing burden of TB, and the recognition that it is one of the most neglected health problems worldwide, in 1993 the WHO declared TB as 'A global health emergency'. Indeed, although the metaphor of TB as

"The Captain of all men of death" was thought to be reaching obsolescence, we are currently in a period of resurgence of the disease. The incidence of TB cases which was on a steady decline since last 50 years, especially in the developed nations, has seen increases since early 1990s. This has been largely attributed to the emerging HIV epidemic, although MDR tuberculosis, neglect of control programs, immigration and other social changes has been important factors<sup>2</sup>.

Tuberculosis is a chronic granulomatous infectious disease, commonly affecting the lungs. However it is a systemic infection and may involve other extrapulmonary site. Abdominal tuberculosis is 6th commonest form of extrapulmonary involvement. Its nonspecific and protean clinical manifestations cause intestinal tuberculosis to be confused with many other diseases especially Crohn's disease and intestinal neoplasms.

The symptoms and signs often quite vague and laboratory investigations and radiological findings are sometimes non-conclusive. There is no single feature which is diagnostic for abdominal tuberculosis. In case of any localized involvement of the structures of the abdomen the presenting clinical picture will mimic the disease of that organ only. It continues to challenge the diagnostic acumen and therapeutic skills of the present day surgeon.

The Management abdominal tuberculosis is still controversial. Surgical intervention which was frequently used in the past for diagnosis is not necessary and is reserved for complications such as obstruction, perforation, fistula, or a mass which does not resolve with medical therapy<sup>3</sup>. In most cases a trial of medical therapy should be undertaken prior to surgical intervention<sup>3</sup>. However complications can be fatal and may occur after initiation of antituberculous medications<sup>3</sup>. Many authors advocate surgical management in intestinal obstruction due to TB as the obstructed lesion is often hypertrophic. This form according to many authors, often responds badly to medical management<sup>4</sup>.

The Surgical treatment of intestinal tuberculosis too has passed through many phases, from the bypass procedures of the pre- antibiotic era to the radical surgeries such as hemicolectomy and wide resection, followed by the more recent and more conservative, modified surgical procedures such as limited ileocaecal resection, and stricturoplasties.<sup>5</sup>

Against this backdrop of persistent prevalence of disease, diagnostic challenges it pose & changing role for therapeutic management, that why surgeon called upon today in this disease. Hence, this study aims at a fresh look into abdominal tuberculosis and at a better understanding of its clinical mani-

festations, diagnostic modalities, management and its complications.

## [2] Aim & Objectives

A. To study & analyse clinical presentation of cases of abdominal tuberculosis.

b. To study & analyse various diagnostic modalities for confirmation of

Abdominal tuberculosis

c. To study & analyse management of abdominal tuberculosis.

d. To study and analyse complication of abdominal tuberculosis.

## MATERIAL AND METHODS

Study of patients admitted in tertiary care hospital during May 2010 to Nov. 2013.

### INCLUSION CRITERIA

All suspected and confirmed cases of abdominal tuberculosis.

### EXCLUSION CRITERIA

Cases having evidence of genitourinary tuberculosis.

Cases having active pulmonary tuberculosis

### Methods

Patients detail history, clinical examination carried out

**Routine investigations** carried out in all patients as follows

Haemoglobin test

Complete blood count

Liver Function tests

Renal Function Tests

Mantoux test

Erythrocyte Sedimentation Rate

X ray Chest PA View

X ray Abdomen Erect

### Special Investigations:

These investigations are done for doubtful diagnosis to confirm or support diagnosis.

ELISA Ig

Ascites fluid routine microscopy

Ascites fluid AFB staining

Ascites fluid ADA level

USG (Abdomen + Pelvis)

Computed tomography of Abdomen + Pelvis (plain and contrast.)

Colonoscopy

Barium meal follow through

Biopsy

All patient received AKT as per DOTS.

Conservative management was done for uncomplicated abdominal tuberculosis.

Operative management was done for complications of abdominal tuberculosis and when diagnosis was in doubt.

Patient's study of post op complications, mortality, and follow up was carried out after 2 and 6 months.

Out of 101 cases studied, 39(38.61%) were male and 62(61.39%) female cases were female. Female cases more observed than male. Male to female ratio was found to be 1:1.6. In male as well as female maximum patients were observed in 21-30 yrs age group.

In present study majority patients were from lower socioeconomic group i.e. 66(65.35%) patients consistent with studies done by Naseer Ahmed et al (2008)<sup>6</sup> and Muhammad Saaiq et al (2012)<sup>7</sup>

Abdominal pain was observed in 100(100%) patients which was major symptom. After pain in abdomen second major symptom was found to be loss of weight 78(77.23%) followed by loss of appetite which observed in 74(73.27%) of patients. Past h/o tuberculosis observed in least no of patients i.e. 9(8.91%). Rest symptoms observed were vomiting 59(58.42%) patients, constipation 43(42.57%) patients, diarrhoea 12(11.88%), nausea 55(54.45%), Abdominal distension 43(42.57%), Night sweats 44(43.56%), fever 49(48.51%). Most common clinical sign observed in this study was pallor 68(67.33%), which followed by Abdominal tenderness 40(39.60%). Least observed clinical sign was lymphadenopathy 18(17.82%). Rest clinical signs were Ascites 36(35.84%), lump in abdomen 25(24.75%), Abdominal guarding 32(31.68%), Abdominal Rigidity 22(21.78%).

In present study 70(69.31%) patients had low haemoglobin. Lymphocyte count predominance was found in 31(30.69%) patients. Liver function test, renal function test found derange in 15(14.85%) and 10(9.90%) patients respectively. ESR was raised in 68(%) patients and Mantoux test was positive in 26(25.74%) patients. Muneef et al (2001)<sup>8</sup> found positive mantoux test in 27% of patients.

In this study chest x ray abnormal findings were present in 25(24.75%) patients and x ray abdomen erect abnormal findings present in 60(59.41%) patients. Out of 101 patients 5(4.95%) were HIV Positive.

In this study, Ultrasonography and CECT Abdomen pelvis were done in 95(94.06%) patients. Biopsy, ELISA Ig, BMFT, colonoscopy were done in 49(48.51%), 35(34.65%), 29(28.71%), 17(16.83%) patients respectively. In CECT abdomen pelvis done in all 95(100%) patient had some positive feature. All 49(100%) biopsy done patients had tuberculosis in biopsy report. Out of 95 Ultrasonography patients 79(83.16%) patients had some positive features. In Barium meal follow through done patients, 29 patients out of 19(65.52) patients had some positive features. 16(94.12%) patients had positive finding out of 17 patients in colonoscopy test. CT scan, USG abdomen, Biopsy, ELISA Ig, BMFT, colonoscopy were not done in 6(5.94%), 6(5.94%), 52(51.49%), 66(64.35%), 72(71.29%), 84(83.17%) patients respectively. Thus, CT scan and Biopsy had 100% sensitivity. Colonoscopy, USG, ELISA Ig, BMFT were having sensitivity of 94.12%, 83.16%, 77.14%, 65.52% respectively. According to Ashraf Muhammad et al (2010)<sup>9</sup> maximum sensitive tests was Biopsy, which was 97% sensitive. Next sen-

## RESULTS

sitive test was ELISA Ig which about 80% sensitive. According to Rustam Khan et al (2006)<sup>10</sup> maximum sensitive tests was Biopsy, which was 100% sensitive. Next sensitive test was USG (A+B) which was 88% sensitive

Mean cell count in present study was  $550.28 \pm 351.26$ . Maximum cell count was 1360 and minimum cell count was 160. Lymphocytes were predominant in all ascites fluids. According to M.P. Sharma et al (2004) total count of ascites fluid is 150-4000/micro litre and predominantly consist of lymphocytes (>70%). Mean protein level was  $3.97 \pm 0.66$ . Maximum protein level was 5.3 and minimum protein level was 3.1 as compared to M.P. Sharma et al (2004)<sup>11</sup>

Mean sugar level was  $76 \pm 10.90$ . Maximum sugar level was 98 and minimum sugar level was 60.

#### Ascites Fluid AFB staining

In present study all ascetic fluid was negative for AFB bacilli. According to M.P. Sharma et al (2004)<sup>11</sup> staining for acid fast bacilli are positive in less than 3% of cases. In present study all patients with ascites had increased ADA level. According to Dwivedi et al (1990)<sup>12</sup> ascites fluid ADA level has 100% sensitivity.

In this study out of 101 patients 34(33.66%) patients managed conservatively and 67(66.34%) patients managed by surgically. In Muhammad Ashraf et al (2010)<sup>9</sup> study 88% patients managed surgically and Shabana Jamal et al (2011)<sup>13</sup> study 95.6% patients were managed surgically. In present study Resection and anastomosis was most common i.e. in 26.875 patients, which followed by right hemi colectomy in 23.88% patients. Adhesiolysis was done in 22.39% patients. Diagnostic laparoscopy was performed in 16.42% patients.

According to Muhammad Ashraf et al (2010)<sup>9</sup> right hemi-colectomy was the most common procedure performed. Adhesiolysis was done 17% patients. According to Taj Mohammad Khan et al<sup>14</sup> most common procedure done was resection and anastomosis. In present study, ileocaecal mass was found in 21(32.84%) patients, which is most common operative finding. Strictures were found in 17(25.37%) patients. Adhesions was found in 15(22.39%) patients. Ascites was found in 12(17.91%) patients. Enlarged mesenteric lymph nodes were found in 7(10.45%) patients. Perforations and military tubercle were present in 6(8.96%), 5(7.46) patients respectively (table 1). According to Taj Mohammad Khan et al<sup>14</sup> adhesions was most common finding and Naseer Ahmed et al<sup>6</sup> strictures were most common intraoperative finding.

In present study most common site was intestine i.e. in 60.39% patients followed by peritoneum in 42% patients. Mesenteric lymph node and solid organ involved in 7% and 6% patients respectively consistent to Rustam et al (2006)<sup>10</sup>

In intestine ileum is most common part involved i.e. in 33(32.67%) patients. In intestine rest parts jejunum, ileocaecal region, appendix were involved in 4(3.96%), 22(21.78%), 2(1.98%) patients respectively. In post-operative patients, 8(11.94%) patients were developed wound infection. Septicaemia and anastomosis leak developed in 2(2.99%) patients.

TABLE NO.1: DISTRIBUTION OF SAMPLE BY OPERATIVE FINDINGS

Operative Findings	frequency	Percentage
Ileocaecal Mass	22	32.84
Strictures	17	25.37
Adhesions	15	22.39
Ascites	12	17.91
Mesenteric Lymph Nodes	7	10.45
Perforations	6	8.96
Miliary tubercles	5	7.46

Pulmonary complications developed in 5(7.46%) patients. One (1.49%) patients died postoperatively. Arshad Abro et al (2010)<sup>15</sup> most common post-operative complication was wound infection and Muhammad-ul-din et al (2012)<sup>16</sup> most common post op complication was respiratory infection. During follow up 80% patients completed 6 months of AKT and 20% were still on AKT. Nausea and vomiting occurred in 4% patients. 2% developed jaundice. Rests of the Patients were asymptomatic.

#### CONCLUSION

Abdominal tuberculosis is one of common cause of chronic abdominal pain and incidence being common in lower socio-economic status. The History of tuberculosis is as old as the history of mankind. Possible routes of abdominal tuberculosis include Ingestion of tubercle bacilli, Haematogenous seeding, Transport via infected bile, and Extension from adjacent diseased organs or tissues. There is no single feature which is diagnostic of abdominal tuberculosis. Tuberculosis has been known for its protean manifestations and often referred to as the 'Great Mimic'. It can present with various symptoms ranging from chronic grumbling pain abdomen to acute perforation; from mild fever to meningitis as a result of miliary tuberculosis. To diagnose Tuberculosis high degree of suspicion is the prime need. This study thus gives a basic outline of presentation diagnosis and management of abdominal tuberculosis in developing country.

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