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Research Article

### STUDY OF 250 ABDOMINAL TUBERCULOSIS CASES AT TERTIARY CARE TEACHING HOSPITAL IN FAISALABAD

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**Abstract:**

**Objectives:** To highlight the importance of the rapidly spreading abdominal tuberculosis and raise concern in the medical community about its different presentation.

**Material:** This is a prospective study of 250 cases of abdominal tuberculosis conducted at the surgical Units of Allied Hospital, Faisalabad for one-year duration from October 2019 to September 2020.

**Results:** A total of 250 patients were treated during the study period, with women being the overwhelming majority of 58% (145). The mean age was 37.5 years and chronic abdominal pain was the main symptom in 65.6% (164) of patients, followed by weight loss and evening fever. 70% of patients had Hb <10 g / dl and ESR elevated above 20 mm / h in 61.2%. The chest X-rays were mostly inconclusive, and the abdominal X-rays showed non-specific results. Abdominal ultrasound was dominated by ascites 14.8% (37), mass right iliac fossa 11.6% (29) and distended intestinal loops in 18% (45). The CT examination additionally confirmed the ultrasound results. In 130 patient's laparoscopies was performed and 86 underwent laparotomy with adhesions. The most common perioperative symptoms were bands 39.2% (51), followed by ascites in 28.4% (37). The histopathology of the biopsy specimen revealed chronic granulomatous inflammation in 115 cases, the rest were nonspecific. All patients underwent standard 4-drug anti-tuberculosis therapy and were regularly monitored. The mortality rate was 1.2%, while 98.8% of the patients completely recovered.

**Conclusion:** The final diagnosis of abdominal tuberculosis is difficult due to its non-specific presentation and the lack of pathognomonic imaging and histopathological results.

**Key words:** Chronic abdominal pain, tuberculosis, anti-tuberculosis therapy, diagnostic laparoscopy.

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**INTRODUCTION:**

Tuberculosis continues to be a serious health problem, especially in developing countries, with over 8 million new cases every year<sup>1-2</sup>. Pakistan ranks sixth among countries with a high burden of tuberculosis. The incidence of tuberculosis in Pakistan is 420,000 and the incidence is 231 per 100,000 inhabitants<sup>3-4</sup>. The most common extrapulmonary symptom of tuberculosis in developing countries is abdominal tuberculosis. The prevalence of abdominal tuberculosis in most patients is independent of lung disease, and coexistence has been reported in 5-36% of cases<sup>5-6</sup>. Abdominal tuberculosis is believed to be the result of the reactivation of latent tuberculous lesions in the peritoneum, previously formed by ingestion of infected material such as sputum or milk, or of heterogeneous spread to the abdominal cavity and lymphatic system from a distant site, usually in the lungs<sup>7</sup>. The most commonly affected areas are the peritoneum and ileocecal area, followed by the jejunum and colon. The diagnosis of abdominal tuberculosis is difficult due to non-specific clinical and radiological symptoms, the lack of specific biological markers and the long incubation time of cultures<sup>8-9</sup>. The purpose of this study is to evaluate the different presentation of this disease and to highlight the importance of its rapid spread in our region.

**MATERIAL AND METHOD:**

This is a prospective study of 250 cases of abdominal tuberculosis conducted at the surgical Units of Allied Hospital, Faisalabad for one-year duration from October 2019 to September 2020. All patients with features suggestive of abdominal tuberculosis (chronic abdominal pain, weight loss, evening fever, and abdominal weight) were included in this study. All these patients were admitted and examined. The examinations included CBC, ESR, Montoux's test, chest and abdominal X-ray, ultrasound and abdominal computed tomography. Patients who required early surgical intervention were operated on. The perioperative examination revealed the type and extent of the disease, involvement of the lymph nodes and intestines, and the presence of perforation and narrowing. Surgical procedures included adhesiolysis, hemicolectomy, ileostomy, and laparotomy. In all cases, the biopsy was sent to histopathology. The data was saved on a separate proforma and analyzed.

**RESULTS:**

In terms of demographics, the total number of patients studied was 250, including 105 men and 145 women, with a male to female ratio of 1: 1.5. All of which are economically poor areas. The age range of our patients was in the range of 15-60 years, and the average age was 37.5 years. The number of cases presenting different age groups is presented in Table 1.

Patients (n)	250
Age Range (years)	15-60
Gender (M/F)	105/145
Age-group Interval	
15-25	55 (22%)
26-35	90 (36%)
36-45	73 (29.2%)
46-55	24 (9.6%)
>55	8 (3.2%)

Table 2: *Clinical (features on presentation (signs / symptoms)*

<b>Features</b>	<b>(n)</b>	<b>(%)</b>
Chronic Abd. pain	164	65.6%
Acute on chronic abdomen	45	18%
Mass abdomen	11	4.4%
Weight loss	166	66.4%
Evening Pyrexia	154	61.6%
Bloating Sensation	122	48.4%
Chronic Diarrhea	55	22%
Bleeding P/R	07	2.8%
Vomiting	67	26.8%
Loss of appetite	93	37.2%

Table 3: *Radiological Findings*

<b>U/S Findings</b>	<b>(n)250</b>	<b>(%)</b>
Normal	95	38%
Mild-Moderate Ascites	37	14.8%
Mass RIF and Mesenteric Lymphadenopathy	29	11.6%
Distended Intestinal Loops	45	18%
Inconclusive	44	17.6%
<b>CT Findings</b>	<b>(n)250</b>	<b>(%)</b>
Normal	75	30%
Distended Loops of Intestine	63	25.2%
Ascites	54	21.6%
Thickened loop of Intestine and Cecum	21	8.4%
Mass pelvis, abdomen & RIF	20	8%
Lymphadenopathy	17	6.8%

Most of our patients had chronic abdominal pain 164 (65.6%), acute abdominal pain 45 (18%), and massive ascites abdominal pain 11 (4.4%). All these cases had

additional clinical features of weight loss, evening fever, and anemia, and a general record of symptoms is presented in Table 2. About 175 (70%) of our

patients had anemia at a rate of 20 mm / h. It was found in 153 (61.2%) patients. The Montaux test was performed in 50 patients and was positive in 35. Chest X-rays were conclusive in only 9 (3.6%) cases, of which cavitation was found in 4 and pulmonary infiltration in 5. Abdominal X-rays were performed in 194 cases with gas shadows in the lumen in 45 cases, gas under the diaphragm in 7 and normal in 142. Ultrasound examinations were performed in all patients, which were normal in 95 cases and abnormal in 155 cases. All patients with normal results in 75 (30%) of the cases underwent computed tomography confirmed by imaging, the detail of radiological

results is presented in Table 3. A total of 216 out of 250 patients underwent various surgical procedures and 34 were treated conservatively. Diagnostic laparoscopy was performed in 130 patients, while 86 patients underwent open laparotomy. The most common symptoms of per-op were adhesions and stripes, followed by ascites and tuberculous peritonitis. Due to the acute onset of the disease and high abdominal distention, 86 patients underwent laparotomy, who was not eligible for laparoscopy. Details of the findings and various procedures performed during open laparotomy are presented in Table 4.

	(n)	(%)
<b>Findings</b>		
Adhesions & Bands	51	39.2%
Ascites	37	28.4%
Tuberculous Peritonitis	15	11.5%
Mass RIF	9	6.92%
Ferozen Pelvis	7	5.38%
Mesenteric Lymphadenopathy	6	4.61%
Normal findings	5	3.84%
<b>Procedures</b>		
Illeostomy alone	40	46.5%
Illeostomy+ Rt. hemicolectomy	5	5.81%
Rt. hemicolectomy alone	7	8.13%
Only Biopsy taken	16	18.6%
Appendectomy with lymph Node Biopsy	7	8.13%
Laparastomy done	6	6.97%

Biopsy histopathology was performed in 175 patients. Of these, 115 showed chronic granulomatous inflammation, while 60 were equivocal and showed nonspecific inflammation. After diagnosis of abdominal tuberculosis based on clinical, operative and pathological findings, patients were enrolled in the standard 4-drug ATT regimen (Miambutol, INH, Rifampicin and Pyrazinamide). The average length of treatment was 6 months to two years. Patients were followed for up to 2 years for postoperative complications and medication-related complications. Nine patients developed jaundice and their

medications had to be discontinued. After monitoring for rifampicin, LFT was discontinued and patients started taking alternative medications (Inj. Streptomycin, Ethambutol, and INH). Seven patients developed faecal fistulas as a complication of surgery, which was treated conservatively. Three patients died of sepsis and the end stage of the disease.

#### DISCUSSION:

Abdominal tuberculosis is more common in women than in men, which was observed in our study as well as in other studies conducted at the national level.

Vogel Y et al. Found that infection in women occurs in the peritoneum through inflammation of the fallopian tubes during sexual activity<sup>10</sup>. In our society, reduced immunity (malnutrition) and poor socioeconomic conditions are more responsible, which also shows from our data, as most of our patients belonged to poverty-stricken areas with low socio-economic status. The age range of our patients was 15-60 years old, with the majority in the second and third decades, which is consistent with another studies<sup>11-12</sup>. In our study, 65.6% of patients reported chronic abdominal pain, which was also reported by Demir et al. In their study. However, in contrast, others reported weight loss and fever as the most common symptoms. A significant number of our patients also experienced weight loss, evening fever, and other intestinal symptoms<sup>13</sup>. Although most cases of abdominal tuberculosis are thought to be secondary to pulmonary tuberculosis, x-rays often show no symptoms of the disease. Only 9 (3.6%) of our patients had abnormal X-ray results, which is consistent with other studies<sup>14-15</sup>. Low hemoglobin levels were found in 177 (70.8%) of our patients. Similarly, Khan et al. Also reported anemia in many patients. Although ultrasound is thought to be quite informative in cases of abdominal tuberculosis, in our study the ultrasound results were mostly normal or inconclusive, as also seen in other studies.

### CONCLUSION:

The incidence of abdominal tuberculosis is increasing in our region due to poor socioeconomic conditions and low immunity. The final diagnosis of this disease is difficult due to the non-specific clinical picture and the lack of pathognomonic radiological results. Physicians should be aware of the variety of presentations of abdominal tuberculosis as well as knowledge of helpful research tools. In order to confirm the diagnosis, diagnostic laparoscopy should be encouraged.

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