

# PRESENTATION OF ABDOMINAL TUBERCULOSIS IN N.W.F.P. AND ITS CORRELATION WITH OPERATIVE FINDINGS

Sajjad Muhammad Khan, Khalid Mahmood Khan, Abdus Samad Khan,  
Muhammad Jehanzeb, Waqar Alam Jan, Mumtaz Khan, Usman Ali

Department of Surgery  
Postgraduate Medical Institute, Lady Reading Hospital, Peshawar.

## ABSTRACT

**Objective:** To study clinical presentations of abdominal tuberculosis and to correlate these with the operative findings.

**Material and Methods:** This cross-sectional study was conducted in the Surgical "A" unit, Lady Reading Hospital, Peshawar from January 2003 to December 2003. A total of 92 patients were studied. The patients were admitted through emergency or OPD with one or other mode of presentation of the abdominal tuberculosis or with complications arising from it.

**Results:** Out of 92 patients studied during the specified period, 60 were female patients. Sixty-five patients were below the age of 30 years. Intestinal obstruction (45.60%), abdominal mass (27%), and peritonitis (19.5%) were the common modes of presentation. Per-operatively ileo-caecal mass was found in 25%; strictures alone in 21.74%; stricture with perforation in 19.56% and ascites in 10.86% cases. Operative procedures performed were: adhesiolysis (27%), right hemicolectomy (19.50%), ileostomy (19.50%), ileotransverse bypass (16.30%) and local resection with end to end anastomosis (13%).

Postoperative complications included wound infection (24%), cholestatic jaundice (4.34%) and septicemia in 2.2% patients. There was one death (1.1%).

**Conclusion:** Due to a wide variety of nonspecific presenting symptoms and signs, abdominal tuberculosis is diagnosed late leading to delay in management and more complications.

**Key words:** Abdominal Tuberculosis, Modes of Presentation, Operative Management, NWFP.

## INTRODUCTION

Abdominal Tuberculosis commonly affects gastrointestinal tract, mesentery and its nodes, the peritoneum<sup>1</sup> and the solid organs related to the gastrointestinal tract like liver, pancreas and spleen. Females are more commonly affected than males<sup>2-4</sup>. The disease can present at any age but the incidence is more in young adults<sup>5</sup>.

The disease can present as tuberculous peritonitis or intestinal obstruction. The four varieties of tuberculous peritonitis [ascitic, encysted (loculated), fibrous and purulent] and four macroscopic forms of intestinal tuberculosis (i.e. Hypertrophic, Ulcerative, Ulcerohypertrophic, Fibrotic) can present so differently that it is some times very difficult to differentiate it from other illnesses like Crohn's disease<sup>5</sup> and intra-abdominal mass lesions<sup>6</sup>.

Careful history and clinical examination and intelligent use of laboratory and radiological

investigations can help to narrow down the list of differential diagnosis. We studied the various modes of presentation of abdominal tuberculosis and then correlated them with the operative findings.

## MATERIAL AND METHODS

This was a cross sectional study and was conducted in the Surgical "A" unit Lady Reading Hospital, Peshawar during the period from January 2003 to December 2003. All the patients of abdominal tuberculosis above twelve years of age were included in the study. The patients were admitted through emergency department or OPD with one or more mode of presentation of abdominal tuberculosis or those with complications arising from the disease.

After detailed history and thorough clinical examinations, each patient was initially resuscitated and routine investigations including complete blood picture, ESR, blood urea, blood

sugar, serum electrolytes and urinalysis was performed. X-ray of the abdomen (supine and erect posture), chest X-ray and abdominal ultrasound were performed in every case. Ascitic fluid was sent for biochemical and cytological examination where appropriate. Tissue biopsy (omental, peritoneal, band or lymph node) from suspicious areas and all the excised specimens were sent for histopathologic examination in all the cases. The clinical and operative findings and operative procedure performed were recorded on a standard proforma. The data was analyzed manually.

Various surgical procedures were performed depending upon the site and state of the disease process. Postoperative complications were recorded and managed accordingly.

Post-operatively all the patients were put on anti-tuberculous chemotherapy for 9 months.

## RESULTS

The abdominal tuberculosis in our study was more common in females, out of 92 patients, 60 patients were females and 32 were males (Fig-1).

### SEX DISTRIBUTION IN CASE OF ABDOMINAL TUBERCULOSIS (n=92)

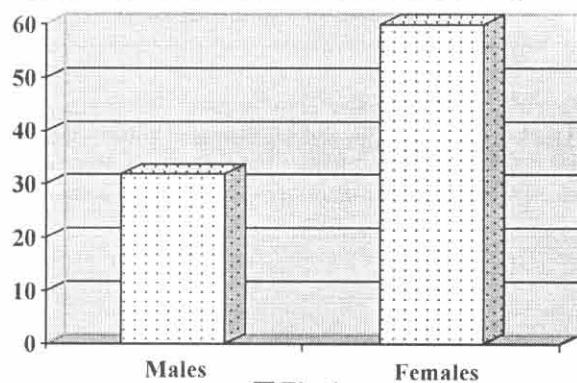


Fig-1

Majority of the patients belonged to relatively young age group. The disease was more common in the age of 21-30 years (35 patients) and 11-20 years (30 patients); i.e. about 70% of the patients were below 30 years of age (Table-1).

### AGE DISTRIBUTION AMONG PATIENTS OF ABDOMINAL TUBERCULOSIS

| Age of the patients | Number of patients (n = 92) | Percentage |
|---------------------|-----------------------------|------------|
| 11 - 19             | 30                          | 32.60%     |
| 20 - 29             | 35                          | 38.04%     |
| 30 - 39             | 15                          | 16.30%     |
| 40 - 49             | 8                           | 8.69%      |
| 50 and above        | 4                           | 4.34%      |

Table 1

### MODES OF CLINICAL PRESENTATION AMONG PATIENTS OF ABDOMINAL TUBERCULOSIS

| Mode of presentation             | Number of patients (n = 92) | Percentage |
|----------------------------------|-----------------------------|------------|
| Intestinal obstruction           | 42                          | 45.60%     |
| Abdominal mass                   | 25                          | 27%        |
| Peritonitis                      | 18                          | 19.5%      |
| Sub acute intestinal obstruction | 7                           | 7.60       |

Table 2

Out of 92 cases 42 cases (45.60%) presented with acute intestinal obstruction, 25 patients (27 %) with abdominal mass and 18 (19.5%) patients with peritonitis (Table-2).

### CONSTITUTIONAL & ABDOMINAL SYMPTOMS IN PATIENTS OF ABDOMINAL TUBERCULOSIS (n= 92)

| Symptoms                       | Number of patients | Percentage |
|--------------------------------|--------------------|------------|
| <b>Constitutional Symptoms</b> |                    |            |
| Fever                          | 61                 | 65%        |
| Weight loss                    | 57                 | 61%        |
| Anorexia                       | 48                 | 42%        |
| Night sweats                   | 37                 | 40%        |
| <b>Abdominal Symptoms</b>      |                    |            |
| Abdominal distension           | 83                 | 90%        |
| Abdominal pain                 | 78                 | 85%        |
| Vomiting                       | 74                 | 81%        |
| Constipation                   | 28                 | 30%        |
| Diarrhoea                      | 23                 | 25%        |
| Bleeding P/R                   | 8                  | 9%         |

Table 3

Fever (65%), Weight loss (57%) and anorexia (48 %) were the prominent constitutional symptoms, while abdominal distension (90%), pain abdomen (85 %), and vomiting (81%) were the symptoms related to the abdomen (Table-3).

The most reliable diagnostic investigation was histopathology (100%), while raised ESR (90.91%), abdominal ultrasound (66.67%) and erect X-ray abdomen (65.22%) were also helpful investigations (Fig. 2).

Operative findings and surgical procedures performed are summarized in Tables 4 & 5 respectively. Ileo-caecal mass was found in 23 patients. Stricture with perforation was seen in 19.56% and without perforation in 21.73%. Three patients had frozen abdomen and six had adhesions and bands. Eighteen patients required right hemicolectomy. More than one procedure was performed in one patient.

### USEFULNESS OF INVESTIGATIONS IN CASES OF ABDOMINAL TUBERCULOSIS (n = 92)

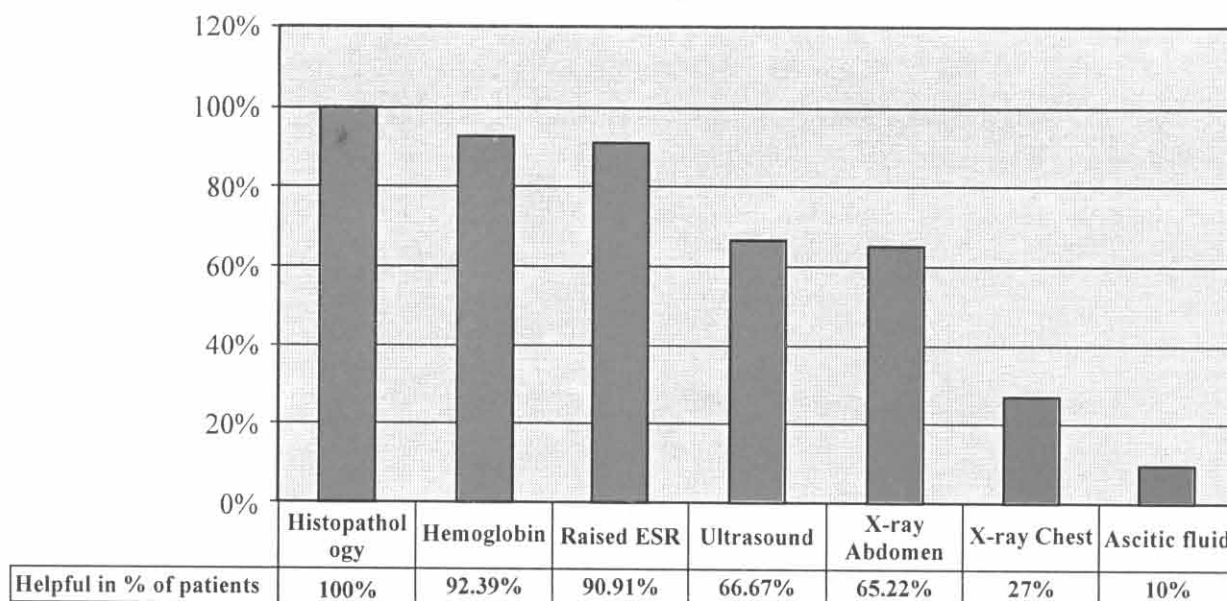


Figure: 2

### OPERATIVE FINDINGS IN PATIENTS OF ABDOMINAL TUBERCULOSIS (n= 92)

| Mode of presentation           | Number of patients | Percentage |
|--------------------------------|--------------------|------------|
| Ileocaecal mass                | 23                 | 25%        |
| Stricture with perforation     | 18                 | 19.56%     |
| Stricture without perforation: |                    |            |
| Multiple                       | 12                 | 13%        |
| Single                         | 8                  | 9%         |
| Enlarged lymph nodes           | 12                 | 13.04%     |
| Ascites                        | 10                 | 10.86%     |
| Adhesions and bands            | 6                  | 6.52%      |
| Frozen Abdomen                 | 3                  | 3.26%      |

Table 4

### OPERATIVE PROCEDURES IN PATIENTS OF ABDOMINAL TUBERCULOSIS (n= 92)

| Operative procedure performed               | Number of patients | Percentage |
|---|--------------------|------------|
| Adhesiolysis                                | 25                 | 27%        |
| Right hemicolectomy                         | 18                 | 19.50%     |
| Ileostomy                                   | 18                 | 19.5%      |
| Ileotransverse bypass                       | 15                 | 16.30%     |
| Local resection with end to end anastomosis | 12                 | 13%        |
| Lymph node biopsy                           | 12                 | 13%        |
| Omental biopsy                              | 11                 | 11%        |
| Peritoneal biopsy                           | 10                 | 10.80%     |
| Stricturoplasty                             | 4                  | 4.50%      |

Table 5

Out of many operative complications listed in Table-6, wound infection was the most common and occurred in 22 patients (24%). There was one death (1.1%).

### POSTOPERATIVE COMPLICATIONS IN PATIENTS OF ABDOMINAL TUBERCULOSIS (n= 92)

| Complication            | Number of patients | Percentage |
|-------------------------|--------------------|------------|
| Wound Infection         | 22                 | 23.91%     |
| Hepatitis               | 4                  | 4.34%      |
| Ascitic leak            | 3                  | 3.26%      |
| Septicaemia             | 2                  | 2.2%       |
| Enterocutaneous fistula | 1                  | 1.1%       |
| Mortality               | 1                  | 1.1%       |

Table 6

### DISCUSSION

Tuberculosis can involve any part of the gastrointestinal tract, which is the sixth most frequent site of extra-pulmonary involvement<sup>7</sup>.

Females are slightly more affected than male<sup>8-10</sup>. The female to male ratio in our study was 1.9:1. Some authors have not reported any sex predilection<sup>11,12</sup> and there are examples when even more male patients have presented with abdominal tuberculosis<sup>13</sup>. Our study supports the prevalence of the disease in females.

No age is immune to abdominal tuberculosis but it is more common in relatively

## COMPARISON OF THE CONSTITUTIONAL SYMPTOMS WITH OTHER STUDIES

| Study                                 | Weight loss (%) | Fever (%) | Weakness (%) | Abd. Mass (%) | Abd. Pain (%) | Abd. Distention (%) | Anorexia (%) | Night sweats (%) | Hb % | ESR (mm / hour) | Vomiting (%) |
|---------------------------------------|-----------------|-----------|--------------|---------------|---------------|---------------------|--------------|------------------|------|-----------------|--------------|
| Present Study                         | 61              | 65        | -            | -             | 85            | 90                  | 42           | 40               | -    | -               | 81           |
| Uzunkoy A et al <sup>8</sup>          | 81              | -         | 81           | 72            | 72            | 63                  | 45           | 36               | 8.2  | 50              | -            |
| Ozbey H et al <sup>14</sup>           | 57              | -         | -            | 42            | 64            | -                   | -            | 35               | -    | >50(60%)        | 35           |
| Sotoudehmanesh R. et al <sup>10</sup> | 72              | 50        | -            | -             | 84            | -                   | -            | -                | -    | -               | -            |
| Yriberry S et al <sup>27</sup>        | -               | -         | > 50         | -             | 70            | -                   | -            | -                | -    | 98              | -            |
| Xia F et al <sup>28</sup>             | 69              | 50        | -            | 75            | 75            | -                   | 69           | 50               | -    | -               | -            |
| Zhang Z et al <sup>9</sup>            | 29              | 38        | -            | 82            | 67            | 33                  | -            | -                | -    | -               | -            |

Table 7

younger age group<sup>10,11,14,15</sup>. We did not receive children younger than 10 years because this age group is usually treated by our pediatric surgery colleagues, however children are not immune to this disease<sup>14,16</sup>.

Abdominal tuberculosis has varied presentation and can be confused with other conditions. The presenting symptoms may be fever, abdominal pain, weight loss, abdominal swelling, change in bowel habit, anorexia and sweating. The common physical signs are fever, ascites, abdominal mass and doughy abdomen<sup>17</sup>.

Pain abdomen, vomiting and abdominal distention were the most common presenting symptoms of the patients presenting in the emergency department as a case of intestinal obstruction (53%). Intestinal obstruction (acute or subacute) was the commonest mode of presentation of abdominal tuberculosis also in other studies<sup>11,18,20</sup>. This ranges between 64%<sup>14</sup> to 92.8%<sup>11</sup>. The most common site of involvement is usually the terminal ileum<sup>21</sup> and ileo-caecal region<sup>14,20,21</sup>.

A palpable abdominal mass is the next most common presenting feature<sup>8</sup>, usually in the right lower quadrant<sup>7,14</sup>. Adhesive peritonitis and ileal loops can be the cause<sup>14</sup>. Twenty seven percent of the patients in our study presented as abdominal mass while per-operatively ileo-caecal mass was present in 25% of the cases. Caecal mass<sup>22</sup> may some times be misdiagnosed as tumor (colonic carcinoma)<sup>9,23,24</sup>, or may simulate crohn's disease. Forty-two patients presented with symptoms and signs of intestinal obstruction secondary to strictures or stricture with perforation. Strictures usually form in the terminal ileum but they are also found in jejunum and colon<sup>24</sup>.

Quite a large number of patients present with tuberculous peritonitis with or without ascites<sup>25</sup>. Tuberculous peritonitis should be considered in patients with fever, abdominal fullness and exudative ascitic fluid. In our study 10.86% of patients had ascites. A case of exudative ascites due to tuberculous peritonitis with fever of unknown origin may be culture negative for Mycobacterium if examination of ascitic fluid, stool, sputum and pleural fluid<sup>25</sup> is carried out. If the diagnosis of tuberculous peritonitis is confirmed with no evidence of intestinal perforation or obstruction, then these cases can be treated conservatively<sup>25</sup>.

Fever, weight loss, anorexia are non specific constitutional symptoms occurred in 65% , 57% and 48% of cases respectively. The fever was reported from 38%-80% by Li XJ et al<sup>26</sup>. A comparison of the percentage of constitutional symptoms of this study with international studies is given in Table-7. A tissue-based diagnosis was established in 100% of patients, while radiological diagnosis was made in 65.22% of patients. ESR was raised in 90.91%.

Various imaging methods have shown their diagnostic value in abdominal tuberculosis. Plain X-ray abdomen is helpful to find calcified tuberculous lymphadenopathy and intestinal obstruction<sup>29</sup>. Chest X-ray may show evidence of concomitant pulmonary tuberculosis<sup>30</sup>. But none of these methods including clinical signs, laboratory, radiological, endoscopic methods and bacteriological findings provide a gold standard by themselves in the diagnosis of abdominal TB. However, an algorithm of these diagnostic methods leads to considerably higher precision in the diagnosis of this insidious disease which primarily necessitate a clinical awareness of this serious

health problem<sup>13</sup>.

The decision about the operative procedure was taken according to the individual assessment of the patient's condition at the time of laparotomy. Our aim was to do minimum of the procedure and to manage the emergency. Eighteen cases with intestinal perforation underwent resection of the diseased segment followed by ileostomy. Intestinal perforation is occurs when the stricture causes complete obstruction<sup>7</sup>. The incidence is 69% to 77.6% by Talwar et al<sup>31</sup>. He performed resection and end-to-end anastomosis in 77% of cases.

Most of the patients with ileocaecal mass or perforation very close to ileo-caecal valve needed right hemicolectomy<sup>23,32,33</sup>, while in others with strictures in the terminal ileum, ileo-transverse bypass was performed. Strictureplasty (4.5%) and adhesiolysis (27%) was performed as needed and the biopsies were taken when appropriate. There are patients who present with complications requiring surgical intervention such as segmental bowel resection, strictureplasty, adhesiolysis, or ileostomy and constitute 26% of the cases<sup>34</sup>. These patients have a high mortality.

Wound infection is the commonest postoperative complication<sup>35</sup>. It approaches 100% in patients with partial or complete wound dehiscence<sup>36</sup>. Our mortality rate was 1%. It has been reported to be 1% - 13.2% depending on the timing of surgery after development of peritonitis<sup>36</sup>.

## CONCLUSION

Because of wide variety of non-specific symptoms and signs of abdominal tuberculosis, it is difficult to establish a preoperative clinical diagnosis. Though the disease is prevalent, very little clinical suspicion is exercised and majority of cases are diagnosed late resulting in delay in the management and many complications of the disease.

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**Address for Correspondence:**

Dr. Sajjad Mohammad Khan  
Surgical "A" Unit,  
Lady Reading Hospital, Peshawar.