CLINICOPATHOLOGIC PROFILE OF PATIENTS PRESENTING WITH ABDOMINAL TUBERCULOSIS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: To evaluate pattern of presentation of patients with abdominal tuberculosis (TB) in a tertiary care hospital.

Material and Methods: This was a hospital based non-interventional descriptive case series study. It included patients of both sexes, more than 12 years of age, with clinically suspected abdominal tuberculosis. The study was carried out in medical wards of Lady Reading Hospital, Peshawar from January to December 2003. Patients were selected by non-probability convenient sampling method after obtaining an informed consent.

Results: Out of 100 patients with abdominal TB, there were 62 (62%) patients with intestinal TB, 36 (36%) with peritoneal TB and 08 (08%) patients with nodal TB. The mean age of patients was 36.4 ± 9.64 years. Fever was observed in 74 (74%) patients, weight loss in 42 (42%), abdominal pain in 72 (72%), diarrhea in 33 (33%), vomiting in 49 (49%), abdominal mass in 34 (34%), and ascites in 36 (36%) patients. Montoux test was positive in 67 (67%), immuno-chromatographic testing (ICT) for tuberculosis was positive in 62 (62%) patients. Chest radiograph was abnormal in 24 (24%) patients. Abdominal Ultrasonography showed abnormalities in 72 (72%) patients. Barium contrast studies showed abnormalities in 77 (77%) patients. Computerized tomography (CT) of the abdomen was abnormal in 84 (84%).

Conclusion: Intestinal tuberculosis was the most common entity in patients with TB abdomen. The most frequent presenting features of abdominal TB were fever and abdominal pain. CT abdomen had the highest diagnostic yield.

Key Words: Tuberculosis, Abdominal Tuberculosis, Intestinal Tuberculosis, Extra-pulmonary Tuberculosis, Ascites.

INTRODUCTION

Tuberculosis (TB) is an ancient infectious disease responsible for significant morbidity and for considerable uptake of health resources. According to an estimate by WHO, more than 300,000 new patients of tuberculosis develop in Pakistan every year. The incidence of tuberculosis is on the rise even across the Europe and USA, because of co-infection with Human Immunodeficiency Virus (HIV) as well as the emergence of drug resistant strains.

Abdominal tuberculosis is one of the common sites of extra pulmonary involvement. The increasing incidence of pulmonary tuberculosis has led many to predict a corresponding increase in abdominal tuberculosis.

Any portion of the gastrointestinal tract and peritoneum may be affected by tuberculosis. The terminal ileum and the cecum are the sites most commonly involved. Abdominal pain, diarrhea, obstructive symptoms, hematochezia, and a palpable mass in the abdomen are common findings at presentation. Fever, weight loss, and night sweats are also frequent.

The diagnosis of abdominal tuberculosis however, can be difficult at times, in view of the elusive nature of the disease and because the manifestations of abdominal tuberculosis are
protein. The various available diagnostic procedures lack specificity and sensitivity and it is often not possible to get a microbiological confirmation of the infection. Therefore a high index of suspicion is required and unless one entertains the possibility of tuberculosis in abdominal disorders, it can easily be missed. The present study was carried out to evaluate pattern of presentation of patients with abdominal tuberculosis in a tertiary care hospital.

MATERIAL AND METHODS

This was a hospital based non-interventional descriptive case series study. It included 100 patients with clinically suspected abdominal tuberculosis admitted in medical wards of Post Graduate Medical Institute, Govt. Lady Reading Hospital, Peshawar, from January to December 2003.

The sampling procedure was non-probability convenient sampling method. All adult patients above 12 years of age, of both sexes, with clinical features consistent with abdominal tuberculosis (fever, malaise, weight loss, anorexia, diarrhoea, abdominal pain/distension, mass, lymphadenopathy) were included in the study. An informed consent of the patients was taken for their inclusion in the study.

Patients younger than 12 years of age, patients with cirrhotic or malignant ascites and patients with other possible explanations for their illness (Crohn’s disease, ulcerative colitis, amoebiasis, lymphoma) were excluded from the study.

Patients presenting with the following were considered suffering from abdominal tuberculosis: chronic diarrhoea, (for periods ranging from 4 weeks to 12 months, with nocturnal awakening and no response to a therapeutic trial of metronidazole); patients with persistent pyrexia (above 100 °F); weight loss; anorexia; progressive abdominal distension (ascites); or abdominal mass.

Detailed history of patients regarding age, sex, duration of illness, socioeconomic status, other medical illnesses and previous hospitalization (s) was noted; specifically asking about past and family history of tuberculosis.

Patients were subjected to the following: Montoux test with reading after 72 hours, >10 mm was considered positive; sputum examination for acid fast bacilli in patients with productive cough; ESR (erythrocyte sedimentation rate); chest radiograph (apical infiltrates, consolidation, pleural infusion, fibrosis and calcified shadows); abdominal sonography (ascites, lymphadenopathy, matted gut loops, hepatosplenomegaly, abdominal mass); gastrointestinal (GI) series, (cone shaped retracted cecum, a fibrotic terminal ileum, ulcerations, strictures and an incompetent ileocecal valve); ascitic fluid examination (exudative lymphocytic); colonoscopy / sigmoidoscopy with biopsy (transverse and linear ulcers with steep and edematous edges, a deformed ileocecal valve, strictures, inflammatory pseudo-polyps, nodules, fibrous bands, and fistulas).

Data Analysis

All information was recorded on a standard proforma. Statistical Package for Social Sciences (SPSS) version 10 was utilized for data storage, processing and analysis. Descriptive statistical analysis was employed to describe data for frequencies, percentages, ratios, range, and mean value with one standard deviation.

RESULTS

Out of 100 patients of clinically suspected abdominal TB, the study observed 62 (62%) patients with intestinal TB, 30 (30%) patients with peritoneal TB and 08 (08%) patients with nodal TB. Distal (terminal) ileum was involved in 40 patients (40%) and ileocecal region in 22 patients (22%) of 62 intestinal tuberculosis patients. Colonic involvement was not observed in this study.

Age of the patients ranged from 18 to 64 years. Mean age of these patients was 36.4 ± 9.64 years. Sixty four (64%) patients were of less than 30 years of age, 22 (22%) patients in the age range of 31-40 years, 08 (8%) patients in the age range of 41-50 years, 4 (4%) patients in the age range of 51-60 years, 02 (2%) patients were of more than 60 years of age. Majority of patients, i.e., 86% were of less than 40 years of age.

There were 58 (58%) female patients and 42 (42%) male patients with an overall female to male ratio of 1.38:1.

Thirty eight (38%) patients had a family history of tuberculosis and 24 (24%) patients had pulmonary tuberculosis in the past. Eighty two (82%) patients were from the lower socioeconomic group. Sixty eight (68%) patients were from rural areas. None of the patients found to be infected with human immunodeficiency virus (HIV).

There was wide variation in the duration of illness of patients suffering from abdominal tuberculosis ranging from 3 days to one year. Majority of patients, i.e., 62 (62%) had abdominal tuberculosis for more than 46 months.

Mode of presentation of patients with abdominal tuberculosis varied from subacute...
CLINICAL PROFILE OF PATIENTS WITH ABDOMINAL TUBERCULOSIS

<table>
<thead>
<tr>
<th>Variety of Abdominal Tuberculosis</th>
<th>Intestinal n=62</th>
<th>Peritoneal n=30</th>
<th>Nodal n=08</th>
<th>Total n=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Abdominal Symptoms:</td>
<td></td>
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<tr>
<td>a. Abdominal Pain</td>
<td>56 (56%)</td>
<td>14 (14%)</td>
<td>2 (2%)</td>
<td>72 (72%)</td>
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<tr>
<td>b. Diarrhoea</td>
<td>36 (36%)</td>
<td>16 (16%)</td>
<td>1 (1%)</td>
<td>53 (53%)</td>
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<tr>
<td>c. Constipation</td>
<td>14 (14%)</td>
<td>2 (2%)</td>
<td>1 (1%)</td>
<td>17 (17%)</td>
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<tr>
<td>d. Vomiting</td>
<td>40 (40%)</td>
<td>8 (8%)</td>
<td>1 (1%)</td>
<td>49 (49%)</td>
</tr>
<tr>
<td>e. Abdominal Distension</td>
<td>38 (38%)</td>
<td>14 (14%)</td>
<td>2 (2%)</td>
<td>54 (54%)</td>
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<td>f. Abdominal Mass</td>
<td>28 (28%)</td>
<td>4 (4%)</td>
<td>2 (2%)</td>
<td>34 (34%)</td>
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<td>2. Constitutional Symptoms:</td>
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<tr>
<td>a. Fever</td>
<td>48 (48%)</td>
<td>24 (24%)</td>
<td>2 (2%)</td>
<td>74 (74%)</td>
</tr>
<tr>
<td>b. Weight Loss</td>
<td>27 (27%)</td>
<td>13 (13%)</td>
<td>2 (2%)</td>
<td>42 (42%)</td>
</tr>
<tr>
<td>c. Night Sweats</td>
<td>18 (18%)</td>
<td>7 (7%)</td>
<td>1 (1%)</td>
<td>26 (26%)</td>
</tr>
<tr>
<td>d. Anorexia</td>
<td>10 (10%)</td>
<td>4 (4%)</td>
<td>1 (1%)</td>
<td>7 (14%)</td>
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<tr>
<td>3. Pulmonary Involvement:</td>
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</tr>
<tr>
<td>Pulmonary Involvement</td>
<td>18 (18%)</td>
<td>5 (5%)</td>
<td>1 (1%)</td>
<td>24 (24%)</td>
</tr>
</tbody>
</table>

Table 1

presentation in 63 (63%) of patients to acute presentation in 24 (24%) of patients. Peritonitis was the presenting feature in about 11 (11%) of patients.

Fever was observed in 74 (74%) of patients, weight loss in 42 (42%), night sweats in 26 (26%), anorexia in 07 (07%), abdominal pain in 72 (72%), diarrhoea in 53 (53%), constipation in 17 (17%), vomiting in 49 (49%), abdominal mass in 34 (34%), abdominal distension in 54 (54%) and free fluid in the peritoneal cavity (ascites) in 36 (36%) of patients. (Table-1)

Erythrocyte sedimentation rate (ESR) was found to be raised in 83 (83%) patients. Increased Leukocyte count was noted in 46 (46%) patients, which was reported as predominantly lymphocytic. Hemoglobin (Hb) % was lower than normal in about 93 (93%) patients.

Montoux test was positive in 67 (67%) patients. The sputum smears for acid-fast bacilli (AFB) were reported positive in 21 (21%) patients with productive sputum.

Immuno-Chromatographic Testing (ICT) for tuberculosis was positive in 62 patients (62%). Chest radiograph showed evidence of active or healed pulmonary tuberculosis in 24 (24%) patients. Plain abdominal xray detected distended bowel loops, air fluid levels in 42 (42%) patients.

Abdominal Ultrasonography (USG) revealed findings of abdominal tuberculosis in 72 (72%) of patients. Gastrointestinal series (barium contrast studies; barium meal and follow through, barium enemas) showed abnormalities in 77 (77%) patients of intestinal tuberculosis. Computerized tomography (CT) of the abdomen was abnormal in 84 (84%) patients with abdominal tuberculosis.

Sigmoidoscopy was abnormal in 23 (23%) patients with intestinal tuberculosis while colonoscopy revealed abnormalities consistent with intestinal tuberculosis in 44 (44%) patients.

Histopathological examination (HPE) performed on biopsies during colonoscopies and lymph node biopsies showed evidence of tuberculosis in 96 (96%) patients.

DISCUSSION

This study included a total of 100 patients of abdominal tuberculosis (TB). The study observed 62% patients with intestinal TB, 30% patients with peritoneal TB and 08% patients with nodal TB showing the high prevalence of intestinal involvement with tuberculosis.

Distal (terminal) ileum was more commonly involved (64% of patients of intestinal tuberculosis), followed by involvement of ileocaecal region (36% of patients). These observations are in agreement with the study conducted by Baloch, Tufail et al. Colonic involvement with tuberculosis was not observed in this study.

Age of the patients with abdominal TB ranged from 18 to 64 years. Majority of patients i.e. 86% were of < 40 years of age. Mean age of these patients was about 36.4 years. The disease appears to have a predilection for relatively young patients. These observations are comparable to other studies (10-11) (mean age ranging from 24.8-37.8 years), although Chen et al and Jamil et al reported the mean age of their patients to be 55 years.13
There were more females (58%) as compared to males (42%), with an overall female to male ratio of 1.3:1. It reflects the increase burden of abdominal tuberculosis among the females. It is consistent with most of the studies with female to male ratio ranging from 2:1 to 1.2:1, although it is considered more common in males in western countries (Ahmad M, Farough A et al.).

Eighty-two percent patients were from the lower socioeconomic group and 68% patients were from rural areas indicating poverty, overcrowding and unhygienic living conditions as precipitating factors. The same fact has been reported by Ahmad M et al.

None of the patients found to be infected with human immunodeficiency virus (HIV). Infection with HIV is a major reason for increasing burden of tuberculosis in the western countries.

There was wide variation in the duration of illness of patients suffering from abdominal TB, ranging from 3 days to one year. Majority of patients, i.e., 62% had abdominal TB for more than 6 months reflecting the chronic nature of the disease. Mode of presentation of patients with abdominal tuberculosis varied from sub-acute presentation in 63% of patients to acute presentation in about 24% of patients. Similar findings were reported in the study by Babar et al., and Iqbal et al. Peritonitis was the presenting feature in about 11% of patients as observed in the study by Ahmad et al.

Fever was the presenting feature in most of the patients (74%). This is quite similar to a recent Indian review, in which 66.2% of their patients were febrile at presentation. Chronic diarrhoea was present in 53% and vomiting in 49% of patients. Weight loss was observed in 42% of patients. Abdominal pain was reported in 72% of patients. In several large series, abdominal pain has been reported in 36-93% of patients, with an average of 58%. This wide variation in the incidence of abdominal pain may reflect patients' perception of pain as well as the changing nature of the disease. Thus, fever (74%), Abdominal pain (72%) accompanied by long-standing diarrhoea (53%) and weight loss (42%) can be considered helpful in making a confident diagnosis of abdominal TB particularly in endemic areas like ours.

Mantoux test was positive (>10 mm) in 67% patients. In a study by Ramanathan et al., only one-third of patients had any significant reaction and in a Nigerian study, only 15% of patients showed a positive reaction. A negative Mantoux reaction therefore, does not exclude the possibility of abdominal TB.

The sputum smears for acid-fast bacilli were reported positive in 21% patients with productive sputum. However it should be kept in mind that not all patients with abdominal TB have co-existing pulmonary TB and only fraction of those may have open TB.

The ascitic fluid was reported exudative with predominant lymphocytosis in all of 36 patients (100%). Ismail et al. reported exudative lymphocytic fluid analysis in 100% of their patients with tuberculous peritonitis, as was the case in our study. Chest radiograph showed evidence of active or healed pulmonary tuberculosis in 24% patients. Tariq presented similar findings in his study but a study by Hameed et al. reported a higher percentage of pulmonary involvement.

Plain abdominal x-ray detected distended bowel loops, air fluid levels in 42% of patients. In a study by Babar et al., 58% of patients were found with changes on plain abdominal x-ray.

Abdominal ultrasonography (USG) revealed findings of abdominal TB in 72% patients. Abdominal ultrasonography was reported abnormal in 100% of patients in a study by Khan et al.

Gastrointestinal series (barium contrast studies; barium meal and follow through, barium enemas) showed abnormalities in 77% of patients of intestinal tuberculosis. The barium studies are reported to be 100% positive in a study by Ramanathan et al.

Computerized tomography (CT) of the abdomen was normal in 84% of patients with abdominal tuberculosis. Ha HK, Jung et al. and Khan et al. reported almost 100% positivity of CT scan in patients of abdominal tuberculosis in their studies.

Sigmoidoscopy was abnormal in 23% of patients with intestinal tuberculosis while colonoscopy revealed abnormalities consistent with intestinal tuberculosis in 44% of patients. Kim, Lee et al., reported similar observations in their study.

Histopathological examination performed on biopsies during colonoscopies and on lymph node biopsies showed evidence of tuberculosis in 96% patients, which is shown as 100% in the studies by Ramanathan et al and Sadiq.

CONCLUSION

In our study intestinal tuberculosis was
most common in patients with TB abdomen. The most frequent presenting features of abdominal TB were fever and abdominal pain. Computerized tomography of the abdomen had the highest diagnostic yield.

REFERENCES