

Evaluation of Clinico Pathological Study of Abdominal Tuberculosis in a Tertiary Care Teaching Hospital

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Abstract

Background: Tuberculosis (TB) is a deadly infection that can affect almost any organ system. Tuberculosis is a serious hazard. Tuberculosis infected 9.6 million people worldwide in 2014, including 1.2 million HIV-positive people. 1.5 million people died of tuberculosis in the same year, including 0.4 million HIV-positive people. **Subjects and Methods:** A retrospective analysis of all patients diagnosed with abdominal tuberculosis who were on anti-tuberculous medication under DOTS from January, 2018 to September, 2019 was conducted. The TB register and patient record sheets were used as sources of data. Individual patient data was gathered from the DOTS Centre TB register as well as hospital case records from the medical record division. **Results:** There were 36 men (55.4%) and 29 females (44.6%) among the 65 patients, with ages ranging from 20 to 76 (mean 37.248.11). The 30–40-year-old age group was the most commonly afflicted (26.2 percent). In 57 cases, the most common presenting symptom was abdominal pain (87.7 percent). Weight loss was noted in 47 (72.3%) patients, low-grade fever in 34 (67.7%), abdominal distension in 29 (44.6%) cases, vomiting in 26 (40.0%) cases, and constipation in 09 (10.8%) instances. **Conclusion:** The abdominal tuberculosis is a significant clinical entity with a wide range of clinical manifestations. As a result, making a final diagnosis of abdominal tuberculosis is challenging, and a meticulous approach to the patients as well as supporting investigation results are required.

Keywords: Tuberculosis of the abdomen, abdominal discomfort, and histopathology.

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Introduction

Tuberculosis (TB) is a life-threatening infection that can damage nearly any organ system.^[1] The threat of tuberculosis In 2014, 9.6 million people worldwide contracted tuberculosis, including 1.2 million HIV-positive persons. In the same year, 1.5 million people died of tuberculosis, including 0.4 million HIV-positive people.^[2] TB has become more common in both immunocompetent and immunocompromised people, and it can damage almost any organ. Mycobacterium Tuberculosis is the most common cause of tuberculosis, and persons with active TB serve as the reservoir of infection. The majority of instances of tuberculosis are pulmonary, and are spread from person to person via airborne droplets of bacteria. Drinking Mycobacterium Bovis-contaminated dairy milk can cause abdominal tuberculosis.^[3] Because of its nonspecific clinical

presentation, abdominal tuberculosis, which is less frequent than pulmonary tuberculosis, can cause severe morbidity and mortality. It is usually identified late.^[4] Around 15% to 25% of individuals of abdominal tuberculosis also have pulmonary tuberculosis.^[5] Abdominal TB can manifest itself in a variety of ways. The symptoms might range from asymptomatic to a surgical emergency. Between the ages of 25 and 45, abdominal tuberculosis is more frequent. Constipation and vomiting suggestive of intestinal blockage are common symptoms of intestinal TB. It is possible to have recurrent occurrences of subacute intestinal blockage. Symptoms of malignancy in big gut lesions can be mistaken for malignant colonic obstruction. Ascites and stomach distension, diarrhoea, fever, weight loss, malena, and anaemia are all possible symptoms.^[6] Tuberculosis can affect the abdomen in a variety of ways.^[7] To begin, tubercle bacilli can enter the digestive tract by ingesting infected milk or sputum. The bacilli can infect the mucosal layer of

the gastrointestinal tract, causing epitheloid tubercles to develop in the lymphoid tissue of the submucosa. Caseous necrosis of the tubercles causes ulceration of the overlying mucosa after 2-4 weeks, which can spread to the deeper layers, neighbouring lymph nodes, and the peritoneum. These bacilli can occasionally reach the portal circulation or hepatic artery, causing damage to solid organs such as the liver, pancreas, and spleen. In a tertiary care centre, assess the clinicopathological profile of patients with abdominal tuberculosis. Under DOTS, assess their reaction to anti-tubercular therapy.

Subjects and Methods

The current study was conducted in the departments of General Surgery at World College of Medical Sciences Research and Hospital, Jhajjar, Haryana, India, in collaboration with the departments of Gastroenterology and Respiratory Medicine, as well as the medical college DOTS Centre. A retrospective analysis of all patients diagnosed with abdominal tuberculosis who were on anti-tuberculous medication under DOTS from January, 2018 to September, 2019 was conducted. The TB register and patient record sheets were used as sources of data. Individual patient data was gathered from the DOTS Centre TB register as well as hospital case records from the medical record division. Under DOTS, patients were followed up on for therapeutic response. This study included all cases of abdominal tuberculosis diagnosed on the basis of clinical profile and supporting investigation data such as gross morphological findings at endoscopy, colonoscopy, diagnostic laparoscopy, laparotomy, or histologically proven caseating granulomas registered in the medical college DOTS centre between January, 2018 and to September, 2019. The study did not include patients who were lost to follow-up. SPSS version-16 was used to enter and analyse all of the data collected. The results were analysed using descriptive statistical methods.

Results

There were 36 men (55.4%) and 29 females (44.6%) among the 65 patients, with ages ranging from 20 to 76 (mean 37.248.11). The 30–40-year-old age group was the most commonly afflicted (26.2 percent).

Table 1: Distribution of patients according to gender.

Male	36 (55.4%)
Female	29 (44.6%)

Table 2: Distribution of patients according to age group.

Different age group	N (%)
20-30	05 (7.6%)
30-40	17 (26.2%)
40-50	15 (23.1%)
50-60	13 (20.0%)
60-70	11 (16.9%)
> 70	04 (6.1%)

In 57 cases, the most common presenting symptom was

abdominal pain (87.7 percent). Weight loss was noted in 47 (72.3%) patients, low-grade fever in 34 (67.7%), abdominal distension in 29 (44.6%) cases, vomiting in 26 (40.0%) cases, and constipation in 09 (10.8%) instances.

Table 3: Symptoms and physical findings at presentation in patients with abdominal tuberculosis

Symptom's	N (%)
Abdominal pain	57 (87.7%)
Loss of weight	47 (72.3%)
Fever	44 (67.7%)
Abdominal distension	29 (44.6%)
Constipation	09 (10.8%)
Vomiting	26 (40.0%)
Signs	
Anemia	50 (76.9%)
Cachexia	48 (73.8%)
Abdominal mass	17 (26.2%)
Intestinal obstruction	06 (9.2%)
Ascites	17 (26.2%)

Eleven patients had a positive family history of tuberculosis, and three had previously had pulmonary tuberculosis. At the time of presentation, no one had active pulmonary tuberculosis. Anemia was discovered in 50 (76.9%), cachexia in 48 (73.8%), ascites in 17 (26.2%), a palpable abdominal mass in 17 (26.2%), and signs of intestinal obstruction in 06 (9.2%) instances. In 50 cases, the diagnosis of abdominal tuberculosis was confirmed histopathologically (76.9 percent). The remaining 15 (23.1%) patients were microscopically identified with supported clinical and imaging data. Intestinal TB was present in 31 (47.7%), peritoneal TB was present in 22 (33.8%), mesenteric lymph node TB was present in 08 (12.3%), and solid organ TB was present in 04 (6.2%) patients.

Table 4: Site of involvement.

Site	n (%)
Intestinal	31 (47.7%)
Peritoneal	22 (33.8%)
Mesenteric lymph node	08 (12.3%)
Solid organ	04 (6.2%)

The colon is the most prevalent site in intestinal cases, accounting for 12 (38.7%), followed by ileo-caecal 10 (32.3%), ileum 07 (22.6%), stomach 01 (3.2%), and return 01 (3.2%). All of the patients were given DOTS in accordance with RNTCP (CAT -1 in 62 patients and CAT-2 In 03 patients). After 6-8 months of treatment, 65 patients were symptom-free, with no clinical or pathological abnormalities at follow-up visits.

Discussion

Tuberculosis is a granulomatous illness caused by *Mycobacterium tuberculosis*, an aerobic bacterium. Despite the discovery of the causative bacterium more than a century ago, it remains a global problem. The most prevalent kind of tuberculosis is pulmonary tuberculosis, which affects the lungs but can affect any area of the body.^[8] In underdeveloped nations, abdominal TB is a major public health issue that causes significant morbidity and mortality.^[9,10] Males were slightly more affected than

females in this study, which is consistent with the findings of other researchers.^[11] Despite the fact that some Indian research imply a small female predominance.^[12] The most prevalent symptom in our study was abdominal pain. Abdominal discomfort was likewise the most common symptom in the Chalyl et al study. In this series, intestinal TB was the most common form of abdominal TB, accounting for 47.7% of patients, which is consistent with prior data.^[13] In women, peritoneal involvement can result from bacilli spreading from a mesenteric lymph node, contiguous dissemination from an intestinal lesion, or tubercular salpingitis. However, one-third of the individuals have abdominal lymph node and peritoneal TB, but no gastrointestinal involvement.^[14] The ileocaecal area was shown to be the most common site of engagement in the bulk of previous studies. The ileocaecal region is the most typical location of preference, which is related to the ileocaecal region's limited digestive activity, comparatively enhanced physiological stasis, higher rate of fluid and electrolyte absorption, and more lymphoid tissue.^[15] In the current study, the colon is the most commonly affected site (38.7%), followed by the ileocecal (32.3%). In this study, all of the patients had primary abdominal TB. The current study's high frequency of primary intestinal TB is consistent with the findings of most other studies undertaken in underdeveloped nations.^[16] The most significant investigation for a conclusive diagnosis of abdominal tuberculosis is demonstrating tuberculous granuloma. Histopathology was used to make the diagnosis in 76.9% of the individuals in our study. Khan et al. reported a similar histological pattern.^[13] We stress the necessity of clinical suspicion of abdominal tuberculosis, as well as the role and importance of histopathological evaluation in resource-limited settings, where tissue biopsy analysis can aid in diagnosis and, ultimately, proper and timely therapy of affected people. Though pulmonary tuberculosis is the most frequent form of tuberculosis, extrapulmonary tuberculosis, which affects the lymph nodes, gut, bone, joints, meninges, and genitourinary system, is also a substantial cause of morbidity and mortality. After lymphatic, genitourinary, bone and joint, miliary, and meningeal tuberculosis, abdominal tuberculosis is the sixth most prevalent extrapulmonary source of infection. The global incidence of abdominal TB is increasing, however there is a scarcity of updated research and understanding. Any age group might be affected by abdominal tuberculosis. Sharma MP et al found that the majority of individuals who were impacted were between the ages of 21 and 45.^[17] The current investigation also revealed that the age group 30-50 had the highest number of cases (n=32) (49.2 percent) Many other investigations found preexisting pulmonary tuberculosis in 20% of their patients, indicating that this finding of involvement of a slightly younger demographic was also true.^[18] Three of the participants in this study had a history of pulmonary tuberculosis. On smear and culture, Sharma et colleagues discovered a relatively low yield of organisms (acid fast bacilli is positive in less than 3 per cent of cases and positive culture in less than 20 per cent of cases). In the current investigation, the majority of cases could be diagnosed histopathologically (76.9 percent).

Conclusion

In conclusion, the abdominal tuberculosis is a significant clinical entity with a wide range of clinical manifestations. As a result, making a final diagnosis of abdominal tuberculosis is challenging, and a meticulous approach to the patients as well as supporting investigation results are required. Clinical characteristics, laboratory, radiographic, and endoscopic approaches, as well as bacteriological and histological results, do not provide a gold standard in the diagnosis of abdominal tuberculosis on their own. In this series of abdominal TB cases, intestinal TB was the most common clinical type, with abdominal pain, fever, and weight loss as the most common presenting symptoms. It can be successfully treated with anti-TB medications if detected early.

References

- Zaman K. Tuberculosis: a global health problem. *J Health Popul Nutr.* 2010;28(2):111-113. doi:10.3329/jhpn.v28i2.4879
- Kwan CK, Ernst JD. HIV and tuberculosis: a deadly human syndemic. *Clin Microbiol Rev.* 2011;24(2):351-376. doi:10.1128/CMR.00042-10
- Suri S, Gupta S, Suri R. Computed tomography in abdominal tuberculosis. *Br J Radiol.* 1999;72(853):92-8. doi: 10.1259/bjr.72.853.10341698.
- MukewarS, Mukewar S, Ravi R, Prasad A, S Dua K. Colon tuberculosis: endoscopic features and prospective endoscopic follow-up after anti-tuberculosis treatment. *Clin Transl Gastroenterol.* 2012;3(10):e24. doi:10.1038/ctg.2012.19
- Horvath KD, Whelan RL. Intestinal tuberculosis: return of an old disease. *Am J Gastroenterol.* 1998;93(5):692-6. doi: 10.1111/j.1572-0241.1998.207_a.x.
- YunaevM, Ling A, Abbas S, Suen M, Pleass H. Abdominal tuberculosis: an easily forgotten diagnosis. *ANZ J Surg.* 2011;81(7-8):559-60. doi: 10.1111/j.1445-2197.2011.05801.x.
- Hopewell PC. A clinical view of tuberculosis. *Radiol Clin North Am.* 1995;33(4):641-53.
- Kapoor VK. Abdominal tuberculosis: the Indian contribution. *Indian J Gastroenterol.* 1998;17(4):141-7.
- Shaikh MS, Dholia KR, Jalbani MA. Prevalence of intestinal tuberculosis in cases of acute abdomen. *Pakistan J Surg.* 2007;23:52-6.
- Butt T, Karamat KA, Ahmad RN, Mahmood A. Advances in diagnosis of tuberculosis. *Pak J Pathol.* 2001;12:1-3.
- Rajpoot MJ, Memon AS, Rani S, Memon AH. Clinicopathological profile and surgical management outcomes in patients suffering from intestinal tuberculosis. *J Liaquat Uni Med Health Sci.* 2005;4:113-8.
- Kapoor VK. Abdominal tuberculosis. *Postgrad Med J.* 1998;74:459-67.
- Khan R, Abid S, Jafri W, Abbas Z, Hameed K, Ahmad Z. Diagnostic dilemma of abdominal tuberculosis in non-HIV patients: An ongoing challenge for physicians. *World J Gastroenterol.* 2006;12:6371-5.
- HoonJR, Dockerty MB, Pemberton J. Ileocaecal tuberculosis including a comparison of this disease with non-specific regional enterocolitis and noncaseous tuberculated enterocolitis. *Int Abstr Surg.* 1950;91:417-40.
- Bhansali SK. Abdominal tuberculosis. Experiences with 300 cases. *Am J Gastroenterol.* 1977;67:324-37.
- Baloch NA, Baloch MA, Baloch FA. A study of 86 cases of abdominal tuberculosis. *J Surg Pak.* 2008;13:30-2.
- Sharma MP, Bhatia V. Abdominal tuberculosis. *Indian J Med Res.* 2004;120:305-15.
- ArifAU, Shah LA, Ullah A, Sadiq Mu D. The frequency and management of intestinal tuberculosis; a hospital-based study. *J Postgrad Med Instit.* 2008;22(2):152-6.

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