

Original Research Article

Clinico-pathological profile of abdominal tuberculosis and their treatment response in a tertiary care centre

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ABSTRACT

Background: Abdominal tuberculosis is an important clinical entity having varied mode of clinical presentation. So the diagnosis of abdominal TB is difficult and careful approach to the patients and supportive investigation data are necessary to make the final diagnosis. Objectives of the study were to evaluate the clinic-pathological profile of patients with abdominal TB in a tertiary care centre in northern Kerala and to assess their response to anti-tubercular therapy under DOTS.

Methods: This was a retrospective follow up study conducted in the department of Pulmonary Medicine in association with the department of Gastro-medicine and Surgery, and medical college DOTS centre Pariyaram Medical College, Pariyaram Kannur district-Kerala, India. Total 55 patients with abdominal TB diagnosed on the basis of clinical profile and supported investigation data like gross morphological findings at endoscopy, colonoscopy, diagnostic laparoscopy, laparotomy or histologically proven caseating granulomas were selected for this study.

Results: Out of the 55 patients, 31 were males and 24 females with age ranging 16-80 (Mean 30.01±11.7) years. Abdominal pain was the most common presenting symptom in 45 (81.81%). The diagnosis of abdominal TB was confirmed histopathologically in 42 (76.36%). Remaining 13 (23.64%) cases were diagnosed microscopically and with supportive clinical and imaging background. All the patients were treated under DOTS.

Conclusions: Neither clinical features, laboratory, radiological and Endoscopic methods nor bacteriological and histopathological findings by themselves provide a gold standard in the diagnosis of abdominal TB. If diagnosed early, it can be treated successfully with anti-TB drugs.

Keywords: Abdominal tuberculosis, Abdominal pain, Histopathology

INTRODUCTION

Tuberculosis (TB) is a life threatening disease which can virtually affect any organ system.¹ TB burden Globally, 9.6 million people fell ill with TB in 2014, including 1.2 million people living with HIV. In the same year 1.5 million people died from TB, including 0.4 million among people who were HIV-positive.² The prevalence of TB has increased in both immunocompetent and immuno-compromised and it can affect virtually any organ. Most cases of TB are caused by Mycobacterium

Tuberculosis and the reservoir of infection is humans with active TB. Most cases of TB are pulmonary and acquired by person to person transmission of air-borne droplets of organisms. Abdominal TB may be contracted by drinking dairy milk contaminated with Mycobacterium Bovis.³ The abdominal TB, which is not so commonly seen as pulmonary TB, can be a source of significant morbidity and mortality and is usually diagnosed late due to its nonspecific clinical presentation.⁴ Approximately 15%-25% of cases with abdominal TB have concomitant pulmonary TB.^{5,6}

Abdominal tuberculosis has a myriad of presentations. Presentation varies from asymptomatic state to surgical emergency. Abdominal TB is seen more commonly between 25 and 45 years of age. In intestinal tuberculosis abdominal pain, constipation and vomiting suggestive of intestinal obstruction are usually seen.

Recurrent attacks of sub-acute intestinal obstruction can occur. In large gut lesions, symptoms of malignancy may mimic malignant colonic obstruction. Localized or general ascites and abdominal distension, diarrhoea, fever, weight loss, malena and anaemia could be seen.⁷

Tuberculosis can involve abdomen in several ways.^{8,9} Firstly, the tubercle bacilli may enter the intestinal tract through the ingestion of infected milk or sputum. The mucosal layer of the gastrointestinal tract can be infected with the bacilli with formation of epitheloid tubercles in the lymphoid tissue of the submucosa.

After 2-4 week, caseous necrosis of the tubercles leads to ulceration of the overlying mucosa which can later spread into the deeper layers and into the adjacent lymphnodes and into peritoneum. Rarely, these bacilli can enter into the portal circulation or into hepatic artery to involve solid organs like liver, pancreas and spleen.⁶

Objectives

- To evaluate the clinico-pathological profile of patients with abdominal TB in a tertiary care centre in northern Kerala
- To assess their response to anti-tubercular therapy under DOTS.

METHODS

The study was done in the department of Respiratory Medicine in association with the department of Gastro-medicine and Surgery, and medical college DOTS Centre Pariyaram Medical College, Pariyaram Kannur district-Kerala, India. A retrospective analysis of data of all patients diagnosed of abdominal tuberculosis that were on Anti tuberculous treatment under DOTS during the time period 2011 to 2014 was carried out.

The sources of information were the TB register and patient record sheets. Data of individual patients were collected from the DOTS Centre TB register and hospital case records from medical record section. Patients were followed up for treatment response under DOTS.

All cases of abdominal tuberculosis registered in medical college DOTS centre during the period 2011-2014 who diagnosed on the basis of clinical profile and supported investigation data like gross morphological findings at endoscopy, colonoscopy, diagnostic laparoscopy, laparotomy or histologically proven caseating granulomas were selected for this study. Patients lost in follow up were not included in the study.

Statistical analysis

All the data collected were entered and analysed using SPSS version software. Descriptive statistical methods were used and results were analysed.

RESULTS

Out of the 55 patients, 31 were males (56%) and 24 females (44%) with age ranging 16-80 (Mean 30.01±11.7) years. Most common age group affected was 30-50years (54.5%). Abdominal pain was the most common presenting symptom in 45 (81.81%). Weight loss in 40 (72.3%), low grade fever in 37 (67.3%) abdominal distension in 25 (45.5%) cases and constipation in 5 (9%) were reported.

Table 1: Baseline characteristics.

Sex	Number	Percentage
Male	31	56%
Female	25	44%
Symptom's		
Abdominal pain	45	81.8%
Loss of weight	40	73.3%
Fever	37	67.3%
Abdominal distension	25	45.5%
Constipation	5	9%
Age in years		
16-30	4	5%
30-50	30	54.5%
50-70	15	27.27%
More than 70	6	10.9%
Signs		
Anemia	41	77.36%
Cachexia	40	75.47%
Abdominal mass	20	37.74%
Ascites	14	26.42%
Intestinal obstruction	5	9.43%

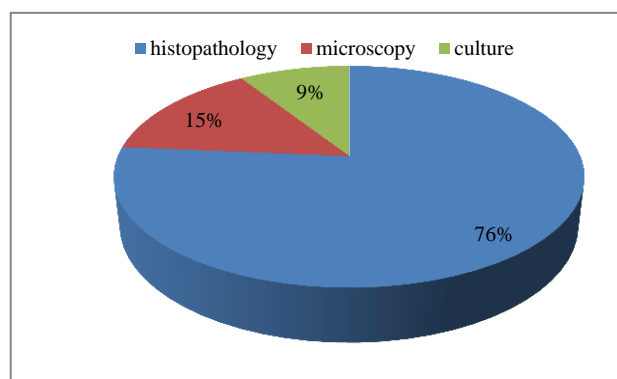


Figure 1: Diagnostic methods.

Ten patients had positive family history of TB and two had past history of pulmonary TB. No one had associated active pulmonary tuberculosis at presentation. Anemia

was found in 41 (77.36%), cachexia 40 (75.47%), ascites 20 (37.74%), palpable abdominal mass in 14 (26.42%) and features of intestinal obstruction in 5 (9.43%) cases.

The diagnosis of abdominal TB was confirmed histopathologically in 42 (76.36%). Remaining 13 (23.64%) cases were diagnosed microscopically and with supportive clinical and imaging background. According to site of involvement, 27 (49.09%) patients had intestinal TB, 18 (32.72%) had peritoneal TB, 7 (12.72) had mesenteric lymph node TB and 3 (5.45) had solid organ TB.

Table 2: Site of involvement.

Site	Number	Percentage
Intestinal	27	49.09%
Peritoneal	18	32.72%
Mesentric lymphnode	7	12.72%
Solid organ	3	5.45%

In the intestinal cases commonest site is the colon 10 (37%), then ileo-caecal 9 (33%), ileum 6 (22%), and stomach and return 1 (4%) each. All the patients were treated under DOTS according to RNTCP (CAT -1 in 53 patients and CAT-2 In 2patients). After 6/8 months of therapy, 51 patients become symptom free and no clinical/pathological findings were observed thereafter at follow up visits. Three patients expired during treatment of which one patient developed drug induced hepatitis and rest two expired due to cardiac cause.

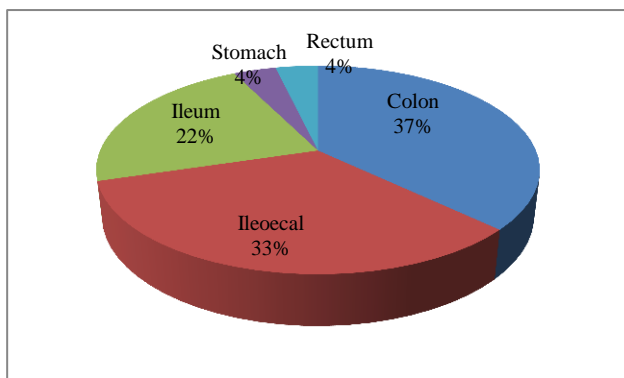


Figure 2: Site of intestinal tuberculosis.

DISCUSSION

Tuberculosis is a chronic granulomatous disease caused by aerobic bacteria Mycobacterium tuberculosis. It remains the world-wide problem despite the discovery of the causative organism for more than a century ago. Pulmonary tuberculosis is the most common form and it primarily involves the lung but any part of the body can be involved by the disease.^{10,11}

Abdominal tuberculosis constitutes a major public health problem in developing countries and carries significant

morbidity and mortality.¹²⁻¹⁵ In this study, males were slightly more affected than females, an observation which is in accordance with the results of other workers.^{12,16,17} Although some Indian studies have suggested a slight female predominance.¹⁸ Abdominal pain was the most common symptom in our study. In Chalyal et al study also abdominal pain was the most common symptom.¹²

In keeping with other reports, intestinal TB was the most predominant form of abdominal TB in this series and accounted for 49.6% of patients.^{12,16,19-21} Peritoneal involvement may occur due to spread of the bacilli from mesenteric lymph node, contiguous spread from intestinal lesion or from tubercular salpingitis in women. However, one third of the cases show abdominal lymph node and peritoneal tuberculosis without any evidence of gastrointestinal involvement.²⁵ The majority of previous reviews showed ileocaecal region involvement as the commonest site.^{12,20}

The most common site of predilection is the ileocaecal region, attributed to the minimal digestive activity, relatively increased physiological stasis, higher rate of fluid and electrolyte absorption and more lymphoid tissue at this site.²²⁻²⁴ In present study colon (37%) is the commonest site involved and ileocecal (33%) second commonest. All patients in this study had primary abdominal tuberculosis. The high prevalence of primary intestinal tuberculosis in the present series is in accordance with most of the other studies conducted in developing countries.^{12,16,26} Demonstrating tuberculous granuloma is probably the most important investigation for a definitive diagnosis of abdominal tuberculosis. In our study, histopathology was the basis of diagnosis in 76% of patients. Similar histopathological pattern was reported by Khan et al.^{12,20}

We emphasize here to suspect the abdominal tuberculosis clinically and also on the role and importance of the histopathological examination in resource poor settings where study of tissue biopsy can aid in diagnosis and ultimately in proper and early management of affected cases. Though pulmonary tuberculosis is the most common form of tuberculosis, extra-pulmonary TB is also a significant cause of morbidity and mortality and affect lymph nodes, intestine, bone, joints, meninges, genitourinary tract, etc.¹⁰ Abdominal tuberculosis is the sixth most common form of extra-pulmonary site of infection after lymphatic, genitourinary, bone and joints, miliary and meningeal TB.²⁴ The incidence of abdominal tuberculosis is rising all over the world however very scant literature and knowledge has been updated.

Abdominal TB can affect any age group. In a study conducted by Sharma MP et al most affected patients were between 21-45 years of age.²⁷ Present study also showed maximum number of cases (n=27) in this age group 30-50 (54.5%) This finding of involvement of slight younger population was also seen in many other studies observed preexisting pulmonary tuberculosis in

20% of their patients.²⁸ In present study two patients had history of pulmonary tuberculosis in the past. Sharma et al found very low yield of organisms on smear and culture (acid fast bacilli is positive in less than 3 per cent of cases and positive culture in less than 20 per cent of cases).²⁷ In present study also the diagnosis could be reached histopathologically in majority of the cases (76%).

Limitations

Single centered and a retrospective study.

CONCLUSION

Abdominal TB is an important clinical entity having varied mode of clinical presentation. So the diagnosis of abdominal TB is difficult and careful approach to the patients and supportive investigation data are necessary to make the final diagnosis. Neither clinical features, laboratory, radiological and Endoscopic methods nor bacteriological and histopathological findings by themselves provide a gold standard in the diagnosis of abdominal TB. In this series of abdominal TB, intestinal TB was the most frequent clinical type and the common presenting symptoms were abdominal pain, fever and weight loss. If diagnosed early, it can be treated successfully with anti-TB drugs.

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