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ABDOMINAL TUBERCULOSIS: CLINICAL PROFILE AND MANAGEMENT IN 45 CASES IN A TERTIARY CARE CENTER.

General Surgery

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ABSTRACT

Objective: To document the clinical profile and outcome of different surgical procedures in patients with abdominal tuberculosis in a tertiary care setup.

Methods: This prospective consecutive case series was undertaken at the department of general surgery, Government medical college and its associated Dr. Susheela Tiwari Memorial Government Hospital Haldwani Nainital Uttarakhand between August 2011 and September 2013. All patients of either gender who presented with Abdominal Tuberculosis were managed during the study period were included.

Results: Total 45 patients with Abdominal Tuberculosis who were part of the study 20 (44.4%) were males and 25 (55.6%) females. The mean age was 28.44±12.17 years. Majority of the patients 35(77.77%) belonged to poor socio-economic families. Family history of Tuberculosis was found in 10 (15.55%) patients. Most of the patients were managed conservatively (64.44%) while remaining patients (35.56%) needed surgical intervention in one form or other. Out of 45, 44 patient (97.77%) presented with pain in abdomen; strictures were most common operative/ laparoscopic findings (n=18) 40%; the patients needing hospitalization were 26 (57.77%) with the mean stay being 19.55±4.51 days. The hospital mortality was 5 (11.11%).

Conclusion: Abdominal Tuberculosis was found prevalent in the population and predominantly affected the patients in their 2nd to 4th decade with slight female preponderance in low socioeconomic status. Majority of the patients presented with the complaints like pain in abdomen, altered bowel habits, vomiting, evening rise of temperature and weight loss. In acute setting the patients presented with complications like acute intestinal obstruction, intestinal perforation, peritonitis needing emergency laparotomy.

KEYWORDS

abdominal tuberculosis, chronic abdominal pain

Introduction

Although pulmonary TB (PTB) which accounts for 80% of cases is the most common form of TB, in about 20% of cases, the disease may present with extra-pulmonary TB (EPTB) involving one or more extra-pulmonary site with or without associated PTB. Abdominal TB (ATB) is a form of EPTB. Among all forms of TB, ATB accounts for 1% cases of TB_1. ATB takes 6th among EPTB after lymphatic, genito-urinary , bone-joints, miliary and meningeal TB_2. ATB can involve any part of gastrointestinal tract (GIT) from mouth to anus4. It most commonly involves the GIT and peritoneum, followed by the mesenteric lymph nodes. Within the GIT, the ileo-cecal area is the most common site of involvement has been reported in various studies conducted in India and outside India[2,4-13].

ATB predominantly affects young adults, between 21-40 years[10, 13-18], the most productive age group. A few Indian studies have suggested a slight female preponderance[10,11,18] however some other studies have reported no such difference[14,19].

When ATB involves the GIT, pathologically it usually presents in either of the three main forms- ulcerative, hypertrophic or ulcero-hypertrophic , fibrous stricture form[20-22].

ATB is a great mimic of various GI disorders clinically and radiologically[23-30]. 20-40% of ATB may present acutely in emergency department with intestinal obstruction, and/or with mesenteric lymph-adenitis requiring emergency surgical intervention[15,31,32]. Tubercular perforations are usually ileal and are proximal to strictures[32-34].

Patients and methods:

This prospective consecutive case series was undertaken at the department of general surgery, Government medical college and its associated Dr. Susheela Tiwari Memorial Government Hospital Haldwani Nainital Uttarakhand between August 2011 and September 2013. All patients of either gender who presented with Abdominal Tuberculosis were managed during the study period were included. Initial assessment and diagnosis was made on the basis of history, physical examination and routine investigations. Ultrasound abdomen. X-ray abdomen and X-ray chest were conducted in all the patients, while other investigations like mantoux test, ascitic fluids, USG- guided fine needle aspiration cytology, CECT- whole abdomen, diagnostic laparoscopy and barium meal follow-through were done where indicated. The operative diagnosis was confirmed by histological diagnosis of tissue specimen.

The socio-demographic profile of the patients, past and present history of concomitant pulmonary tuberculosis, family history of tuberculosis, co-morbid both diabetes, human immunodeficiency virus or immunosuppression for any reason. Mode of presentation, type of surgical procedure undertaken, operative finding, post-operative complications encountered, duration of hospital stay and mortality were all recorded.

Based on the mode of presentation, the patients were stratified into two groups: group A: comprised those presenting with acute abdomen (e.g. perforation, acute intestinal obstruction and peritonitis) and group B comprised those presenting with non- acute symptoms of pain in abdomen, altered bowel habits, evening rise of temperature and abdominal mass.

Patients in group A underwent emergency laparotomy. The various procedures were individualized to the cases and were primary repair of perforation, stricturoplasty, resection and anastomosis, resection of affected segment with ileo-transverse anastomosis, adhenolysis, resection of affected gut segment with exteriorization of the ends.

Intra-operative finding such as strictures, perforation, caseating tubercles, enlarged mesenteric nodes and ascites were note. Tissue for histopathological diagnosis was taken. Patient who had an initial exteriorization of the perforated/resected bowel ends as defunctioning stoma, underwent second stage surgery for reversal of stoma at 10-12 weeks.

Patients in group B were underwent diagnostic workup and were treated with anti-tuberculous therapy (ATT) on outdoor basis.

All the patients received ATT for the period of 6 months. This included an initial intensive –phase therapy with four drugs (i.e. isoniazid, rifampin, pyrizinamide and ethambutol), followed by 3 month continuation phase therapy with 3 drugs (i.e. isoniazid, rifampin and ethambutol). Supplementation with vitamin B6 was also ensured. All the patients receiving ATT had 4 weekly follow-up to ensure compliance to chemotherapy and to rule out any complications of the ATT. Liver function tests and kidney function test were performed

before starting the therapy and were repeated every 8 weeks.

Exclusion criteria:
(a) Patients who did not give informed consent.
(b) Patients with age group ≤5 years and ≥65 years.
(c) Patients who have ≥1 month duration of anti-TB treatment for any kind of tuberculosis.
(d) Pulmonary tuberculosis.
(e) Patients with crohn's disease, ulcerative colitis, mal-absorption syndrome and GI infections.
(f) Patients with chronic liver disease.
(g) Patients who could not be adequately evaluated due to associated significant co-morbidities and very low general conditions.

Results:
Of the 45 patients in the study, 20(44.4%) were males and remaining 25(55.6%) were females. The male female ratio was 1: 1.25 (table 1) The age of the patients ranged between 8-61 years with mean age of 28.44±12.77 years. Majority of the patients (n=29) were between 16 to 35 years of age. A majority of the patients belonged to poor socio-economic families (n=35). Family history of tuberculosis present in 15.55% of families and 1 case associated with HIV, no other co-morbidity were found (table 2).

The most common presentation was pain in abdomen (n=44) in 97.77% followed by vomiting, altered bowel habits and evening rise of temperature (table 3).

The most common physical sign was abdominal tenderness (n=38) 84.44% followed by abdominal distension, visible pallor, ascites and palpable abdominal mass (table 4).

Per-operative and diagnostic laparoscopic finding (table 5) Different surgical procedures done in patients managed surgically (n=16). The diversion procedure in the form of ileostomy and colostomy done in majority of patients in the remaining patients, resection and anastomosis was done (table 6).

Post operative complications included wound infection in 2 (12.5%) of patients. abdominal wound dehiscence in 1(6.25%) patient and chest infection in 1(6.25%) of patients. Hospitalization was required in 26 (57.77%) of patients. Hospital stay ranged from 13 to 27 days with a mean hospital stay of 19.55±4.51 days. The in-hospital mortality in the study was 5 (11.11%), with-in first 5 days of admission due to peritonitis secondary to gut perforation.

Patients receiving ATT therapy had 4 weekly follow ups. Treatment compliance was good, and there was no major side effects warranted the discontinuation of ATT.

Table 1: Descriptive statistics for male and female ratio (n=45)

sex	Number of pts (%)
Female	25(55.6)
Male	20(44.4)
Total	45(100)

Table 2: Age distribution of study sample (n=45)

Age group of pts.	Number of pts.	Mean age(yrs)	Standard deviation	Minimum age(yrs)	Maximum age (yrs)
6-15	6	12.83	2.639	8	15
16-25	15	20.53	3.399	16	25
26-35	14	29.86	3.613	26	35
36-45	4	39.25	3.948	36	45
46-55	4	49.75	0.500	49	50
56-65	2	60.50	0.707	60	61
Total	45	28.44	12.77	8	61

Table 3: Distribution of patients by clinical symptoms:

Serial no.	Symptoms	Number of pts (%)
1	Pan in abdomen	44(97.77)
2	Mass in abdomen	7(15.55)
3	fever	34(75.33)
4	Vomiting	35(77.77)
5	Weight loss	33(73.33)
6	Altered bowel habits	34(75.55)

Table 4: Distribution of patients by clinical sign (n=45)

Serial No.	Signs	Number of pts (%)
1	Abdominal distension	30(66.66)
2	Visible pallor	28(62.22)
3	Palpable abdominal mass	9(16.36)
4	Abdominal tenderness	38(84.44)
5	jaundice	4(8.88)
6	ascites	10(22.22)

Table 5: per-operative and diagnostic laparoscopic finding in the operated cases (n=22)

Serial no.	Per-operative finding and diagnostic laparoscopic finding	Number of pts (%)
1	Military tuberculosis, IC mass and EMLN	1(4.54)
2	EMLN and pyo-peritonium	1(4.54)
3	Stricture in ileum, perforation and EMLN	2(9.1)
4	Cocoon formation, ileal perforation and EMLN	1(4.54)
5	Pyo-peritonium, ileal stricture and EMLN	3(13.64)
6	Ileal perforation and stricture	5(22.74)
7	Dilated large intestine upto rectosigmoid with multiple stricture and perforation of transverse colon	1(4.54)
8	Cocoon formation, pyo-peritonium, ileal perforation with stricture	2(9.1)
9	Multiple ileal perforation with EMLN	2(9.1)
10	Military tuberculsosis, EMLN with ascites	1(4.54)
11	Multiple ileal stricture, IC mass and EMLN	1(4.54)
12	Multiple ileal stricture alone	1(4.54)
13	Ascites, EMLN with sub-hepatic adhesions	1(4.54)
	Total	22(100)

Table 6: Procedure done in patients managed surgically (n=16)

Serial no.	Different surgical procedure done	Number of pts (%)
1	Loop ileostomy	2(12.5)
2	Primary repair of perforation, stricturoplasty and loop ileostomy	1(6.25)
3	Stricturoplasty woth double barrel ileostomy	1(6.25)
4	Resection and anstomosis (RA) of perforated bowel	4(25)
5	Resection of ileo-caecal and ascending colon with ileo-transverse anastomosis	1(6.25)
6	Release of obstruction with loop ileostomy	3(18.75)
7	Resection of perforated bowel with double barrel ileostomy	3(18.75)
8	Right hemi-colectomy with endcolostomy	1(6.25)
	Total	16(100)

Discussion: Of the 45 patients in our study, 20 (44.44%) were males and 25 (55.6%) were females. The male: female ratio was 1:1.25. In our study there was slight female preponderance, however some studies have reported significantly higher number of cases involving females than males[10,11,18,35,36,37], and some of the studies have reported greater number of males than females with abdominal tuberculosis [38,39,40,41].

Age of the patients ranged between 8 to 61 years with a mean of 28±12.77 years. Majority of patients were in their 2nd and 4th decade. Our study is in conformity with the findings of several earlier studies[10,13,15,42].

In our study pain in abdomen was most common symptoms and present in 97.77% of the patient. In the study conducted by Das P and Shukla S.H[43], Bhansali S.K. (1977)[10] R.K. Palmar et al (1985)[14], Dineed P. et al35 and underwood M.J. (1992)[44], pain in abdomen was 94%, 100%, 100%, 93% and 88% respectively.

In our study 84.44% patients had abdominal tenderness. Das P. and Shukla H.S[43]. and bhansali S.K. (1977)[11] have reported abdominal tenderness in their 65.9% and 62.6% of patients respectively. This

difference in the frequency of symptoms may be because most of our patients reported case in the advanced stage of their disease, the reason for their late presentation may be poor accessibility to tertiary centre.

In our study USG-guided FNAC was performed in 40% (n=18) patients. Cytology showed characteristic tubercular granuloma in all the cases with AFB positivity.

In our study CECT-whole abdomen was done in 28 (60.86%) patients and most common finding was mesenteric lymphadenopathy (92.85%). Lymph nodes were involved either alone or in combination with GIT or with peritoneum (ascites). Suri S. et al[45] and Koh D.M. et al[46] also observed mesenteric lymph nodes as most common site of involvement. Other findings of CECT were circumferential mural thickening of ileo-cecal junction in 71.42% and peritoneal involvement in 21.42% of patients.

In the present study 11.11%(n=5) of patients the diagnosis was made on the basis of clinical features and radiological findings as other necessary investigations could not be performed due to one reason or other. These patients were put on therapeutic trials. On regular follow-up, they showed improvement in their general health and this trials is also advocated by many authers[6,14,19,47-49].

In our study 35.55% (n=45) of the patients presented with acute abdomen, like perforation 68.75% (n=11) and obstruction 31.25% (n=5), this is in accordance with Dandapat M.C. et al (1985)[15], in their study around 40% of the abdominal tuberculosis presented with acute abdomen.

In the present study we found overall involvement of GIT was most common. Within the GIT ileo-cecal junction was most frequent part involved (45.45) followed by ascending colon (37.77%) and terminal ileum (31.77%). Our finding is in accordance with those of the published literatures[2, 4-13]. After GIT, mesenteric lymph nodes were most frequent involved (77.77%) followed by peritoneum (22.22%). We had 3 (6.5%) patients in whom mesenteric lymph nodes alone was enlarged without GIT or peritoneal involvement and this is in accordance with the study of Prakash A.(1978)[11] who stated that abdominal lymph nodes may be involves without GIT involvement in 1/3rd of the cases.

In the present study there were 3 cases of plastered abdomen (cocoon formation). In these patents, tissue for histopathology was taken which confirmed tuberculosis.

In the present study, the most common operative procedure for management of ATB complication was resection of the affected segment and with exteriorization of ends (diversion procedure in the form of ileostomy and colostomy) in the first stage and reversal of the stoma with ileo-ileal anastomosis in the second stage after 10-12 weeks in 68.75% of the total 16 operated cases this was followed by resection and anastomosis (RA) in the remaining cases (31.25%). Several other studies have variably employed various surgical procedures for example, Baloch N.A et al[50] and M. Akbar et al[37] performed stricturoplasty in 47.6% and 36.33% of patient, while Malik K.A et al[52] reported right hemicolectomy as the most commonly performed procedure (48.6%) in their series. Rajput M.J et al[40] and Arif A.U et al[54] reported resection and anastomosis in their 58.92% and 39.58% patients respectively.

In the present study we found only one case was associated with HIV (2.2%) but in other studies there is marked association of ATB with the HIV infection[55,56,57].

The mantoux test positivity in the present study sample was 76.2% (n=42). M. A Muneef et al(2001)[56] and Imran Hassan et al(2002)[57] in their study had observed mantoux test positivity in their 27% and 44% patients respectively. It is a known fact that almost one third of the patients with diagnosed tuberculosis may have mantoux test negative results.

In the present study the most common post operative complication was wound infection in 2 (12.5%) of patients, abdominal wound dehiscence in 1(6.25%) patient and chest infection in 1(6.25%) of patients. These complications are also compared to the studies conducted earlier[10,18].

Hospitalization was required in 26 (57.77%) of patients. Hospital stay ranged from 13 to 27 days with a mean hospital stay of 19.55±4.51 days. The in-hospital mortality in the study was 5 (11.11%), with in first 5 days of admission due to peritonitis secondary to gut perforation. In our study 53.33% of the patients treated successfully, 35.56% are under follow-up and 11.11% of the patients expired due to various complications.

Conclusion: abdominal TB is slightly more common in female and commonly affects 2nd to 4th decade of life belonging to poor socio-economic class. The clinical, pathological and radiological presentation is almost the same in this region when compared with the other studies conducted around India and outside, with few variations. A high index of suspicion, proper evaluation and therapeutic trails in such patients is essential for the early diagnosis and timely management, in order to decrease the prevalence of complications like obstruction and perforation.

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