Abdominal Tuberculosis – A Review of 25 Cases

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Twenty five cases of abdominal tuberculosis managed over a period of 15 months (from February 1998 to May 1999) were analysed. Majority of the patients were young females. In 19(76%) patients the diagnosis was established after laparotomy or later on by histopathology. The remaining 6(24%) patients were diagnosed by supportive investigations. The commonest site of involvement was distal ileum.. Unlike other studies, ileostomy was the most frequently performed operation in 5/19 (26%) patients. Other procedures were omental biopsy, simple repair of perforation, adhesiolysis, resection with end to end anastomosis, right hemicolectomy and ileotransverse bypass. Favourable response was seen in patients with ileostomy and right hemicolectomy. The overall mortality rate in our series was 20%. Ciprofloxacin was found to be a reliable antituberculous drug in patients who could not be given first line drugs (Rifampicin, INH).

Key words: Abdominal tuberculosis, ileostomy, ciprofloxacin.

Clinically tuberculosis is characterized by low grade fever, anorexia, weight loss and lethargy . It may also present with different signs and symptoms according to the organ involved. Pulmonary, genital and abdominal tuberculosis are most commonly seen in Pakistan.

Abdominal tuberculosis is a highly evasive disease because of vague initial signs and symptoms and because of relative inaccessibility of the involved organs to clinical evaluation. Definitive diagnostic tests are not available except for histopathology of the involved organ or tissue. Lack of suspicion for the disease by the general practitioner, may cause delay in diagnosis. This may lead to the development of deadly complications before the patients are referred to the hospital..

It is important to diagnose the disease earlier because it affects mainly young adults with a peak incidence in the 3rd to 4th decades. Females are 2 to 3 times more commonly affected[1,2,3,4]. In endemic areas, the accuracy of clinical diagnosis is <50% [5]. The disease may have an acute, acute on chronic or chronic course. It may remain clinically silent and be discovered incidentally at laparotomy or at autopsy.

Patients and Methods

A total number of 25 patients admitted in the East Surgical Unit of Mayo Hospital, Lahore from February 1998 to May 1999 with suspected diagnosis of abdominal tuberculosis were studied. The results were drawn from the available data after critical analysis.

Patients presenting in the emergency were assessed clinically and the available relevant investigation were carried out. Those requiring emergency laparotomy were operated under supervision of consultant surgeons.

Those with subacute presentation were more thoroughly investigated. Abdominal ultrasound and small bowel studies were carried out in selected cases. Mantoux test, chest and abdominal x-rays and ESR were done routinely.

Results

Out of a total number of 25 patients, 8(32%) were males and 17(68%) females. Majority of our patients 17(68%) fell in the age range 15-30 years.. Six out of the total number of patients were admitted through OPD and the remaining 19(76%) patients through the Emergency. Six (24%) patients with suspected diagnosis of abdominal tuberculosis were treated conservatively on the basis of supportive investigations. The remaining 19(76%) patients underwent laparotomy for one or the other complication of the disease.

Main symptoms in the non operated patients were as shown in table 1.

Table 1. Symptoms in the non operative cases.

Symptoms	n=	%age
Fever>4 month duration	6	100
Vague abdominal pain in the RIF=3	6	100
Whole abd.=3		
Weight loss	6	100
Off & on abdominal distension	3	50
Diarrhoea	2	33
Constipation	1	17

All 6 patients had the common complaints of fever of long duration (more than 4 months) with vague abdominal pain and weight loss (Table 1).

On examination, the clinical findings in the non operated patients were as follows:

Table 2. Physical findings in non operated patients

Signs	N=	%age
Pallor	5	83
Tenderness in the abdomen	4	66.6
Doughy feel of the abdomen	4	66.6
Mass RIF	1	17
Ascites/shifting dullness	0	0

On clinical examination of non-operated cases, doughy feel of the abdomen was noticed in 66.6% patients (Table 2).
These patients were investigated and the following results obtained as shown in table 3.

Table 3 Relevant investigations in the non operated patients.

Investigations	n=	%age
TLC within the normal range 9-11000	6	100
ESR>25mm/1st hr	4	66.6
Hb <9g/dl	4	66.6
Mantoux test strongly +ve	4	66.6
X-ray chest (pulm. TB foci)	2	33

Four 67% of the patients were grossly anaemic with an ESR of >25mm/1st hour. Surprisingly all patients in this group had their white cell count within the normal range 4-11,000/cmm and slight lymphocytosis of 40-45% Mantoux test being a supportive investigation was strongly +ve in only 66.6% patients (.>15mm) after 48 hours (Table 3).

All these patients were considered to have abdominal tuberculosis and were put on a 4- drug regimen of antitubercular therapy i.e. Rifampicin, INH PZA and Ethambutol. They were followed up for a variable interval of time, from 4 to 12 months. In most patients a favourable response was seen. The criteria for improvement were, decrease in pain, increase in body weight and settling of fever.

None out of six non operated patients reported back with any surgical complication of the disease.

Those patients who underwent laparotomy (operated cased) were 19 in number. Seventeen (89%) were operated in the Emergency and 2(11%) on the elective list.

Table 4 Symptoms in the operated group

Symptoms	n=	%age
Fever of >4 months duration	12	63
Pain abdomen	17	89
Obstruction	11	58
Previously known tuberculous	6	32

Duration of pain abdomen varied from patient to patient in this group. Twelve patients (63%) had chronic abdominal pain and 7 presented as acute abdomen in the emergency. Clinical signs in these patients on arrival were as listed in Table 5.

Table 5. Physical findings in the operated group.

Signs	n=	%age
Fever >102°F with rigors	16	84
Pallor	16	84
B.P.<90 systolic	12	63
Pulse > 120/min	9	47
Severe dehydration	7	37
Frank septicaemia / toxaemia	3	16

Tuberculosis was suspected preoperatively in 12 out of 19 patients (63%). In the remaining 7 patients (37%) a diagnosis of one of the following conditions was suspected.

Table 6. Preoperative assessment of tuberculosis.

A. Tuberculosis suspected before operation	12/19 (63%)
Tuberculous perforation	7 (37%)
Acute on chronic obstruction	4(21%)
Mass RIF	1(5%
B. Tuberculosis not suspected before operation	7(37%)
Typhoid perforation	3(16%)
Acute abdomen	2(10%)
Acute appendicitis	1(5%)
Lymphoma	1(5%)

The operative findings at laparotomy in these 19 patients are as listed in Table 7.

Table 7. Operative findings.

	n=	%age
Perforation	12	63
Single	5/12	42
- Multiple	7/12	58
Simple obstruction	5	26
Adhesion, fibrous band		
Mass (Matted omentum & intestine)	2	10
Total:	19	100

Perforation leading to peritonitis was the commonest cause of acute abdomen in these patients. Distal ileum was the most frequent site of involvement followed by jejunum (Table 7).

In single ileal perforation where the history was suggestive of enteric fever, the final diagnosis was established by histopathology of specimen taken for biopsy.

Table 8. Surgical procedures carried out

Name of procedure	N=	%age
Loop ileostomy	4	21
Resection with E to E anastomosis	3	16
Limited R hemicolectomy	3	16
Simple adhesionlysis	3	16
Simple repair of perforation	3	16
Tube ileostomy	1	5
Ileotransverse bypass	1	5
Omental biopsy only	1	5

In loop ileostomy group only one patient died and two had prolonged post operative course. There was no mrobidity or mortality in patients who had right hemicolectomy. Among the three patients who underwent simple adhesiolysis one had to be reoperated for intestinal obstruction within six weeks.

The overall mortality rate in our study was 5/25=20%. There was no mortality in the non-operated

cases while in the operated cases 5 patients out of 19 died with a mortality rate of 26%..

Table 9. Post operative complications

	n=	%age
A. Early 1-4 weeks		
Wound infection	13	68
Jaundice	10	53
Enterocutaneous fistula	4	21
Burst abdomen (partial)	3	15
Death	5	26
B. Delayed after 4 weeks		
Recurrent obstruction	1	5
Incisional hernia	1	5

Severe septicaemia was the cause of death in 3 out of 5 patients who died in the early post operative period. In the remaining two patients CNS side effects were seen within a week of starting INH and Rifampicin causing death. 10 out of 19 patients (53%) developed jaundice during the first two weeks after starting INH and Rifampicin. These patients were converted to Ciprofloxacin 200mg I/V BD or 500mg orally BD for a period varying from 15 days to 1½ month until jaundice subsided.

Patients with enterocutaneous fistulae were put on total parenteral nutriton (2000-3000 cal daily) via central venous catheter. 10% Amino acid solutions daily were found to contribute significantly to the general improvement in the condition of these patients. Streptomycin 1gm I/M o.d. and injection Ciprofloxacin 200mg I/V b.d. were given as antitubercular therapy.

Discussion

Abdominal tuberculosis as compared to pulmonary tuberculosis is relatively inaccessible to diagnostic measures, so diagnosis may become difficult and patients usually present late with complications of the disease like perforation and obstruction.

At present, most of the available clinical, biochemical and microbial tests lack sensitivity and specificity. The only reliable technique is a diagnostic laparoscopy or laparotomy. In our study, 19/25 (76%) patients underwent laparotomy for the treatment of one or the other complications of the disease. Whereas in a study by Gondal et al[6] the incidence of therapeutic laparotomy reached 95.65%. In other studies carried out by Baluch[7] and Mahmood & Asghar[8], all patients had to undergo laparotomy to establish the diagnosis.

In our study none of the patients presented predominantly with ascites and we did not have the facility for ADA estimation which is a relatively safe and sensitive indicator of abdominal tuberculosis. As quoted by Lingenfelser and Voight[9,10] it is 100% specific whereas Suneet & Anurag[5] have quoted a sensitivity of 100%, specificity of 97% and an overall diagnostic accuracy of 98%.

Peritoneoscopy may be a helpful investigation, for the diagnosis of tuberculous peritonitis but may seen hazarduous in fibroadhesive disease[11,12,13].

Colonoscopy and biopsy have been quoted to be of great value in the diagnosis of colonic and ileocaecal tuberculosis[14,15,16]..

In our study, majority of the patients were in their second and third decade of life(68%) which is similar to that quoted[6]in other studies. Majority have quoted a female preponderance similar to that in our study[6,17,18]. However, some have shown an equal sex incidence[20] or a male preponderance[7].

In our series, the percentage of already known pulmonary tuberculosis was 32% (8/25) which is higher than that shown by Gondal et al (19.6%), Mahmood (15%), Baluch (14%) and Suneet (8%).

The pattern of subacute or chronic clinical presentation was similar to other studies[6,17,21].

In our series, the diagnosis of tuberculosis was suspected preoperatively in 63% cases which is higher as compared to that shown by others[7,22].

In our series, the most common indication for laparotomy was bowel perforation (63%). This is higher as compared to other studies[6,8,15,23,24]. Hyperplastic tuberculosis in the form of ileocaecal mass was seen only in 10% of our cases, similar to that shown by others[6,8]. Ileum and jejunum were the most frequently involved organs.

In contrast to other studies, the procedure most commonly performed was some kind of exteriorization of ileum.

This study highlights the need for a diagnostic protocol for the detection of early stages of abdominal tuberculosis before the disease reaches the complicated stage carrying a high morbidity and mortality.

We recommend a better communication and early referral system from the general practitioners to the surgeons for better management of the disease.

In endemic areas like ours, the disease should be diagnosed with a high index of suspicion. All cases of fever of more than 4 weeks duration, vague abdominal pain, should get the basic investigations like blood C/E, ESR and X-ray chest.

All patients with fever and pain abdomen of more than 4 weeks duration with an ESR>40mm must be referred to the nearest hospital for necessary investigations.

We also recommend that any patient with strong suspicion for abdominal tuberculosis should be given a therapeutic trial of antibubercular treatment for at least 6 weeks. As regards operative treatment some kind of exteriorisation (ileostomy) done as a primary procedure is much superior than performing a hazardous resection with a high leakage rate. Patients developing jaundice postoperatively may be given a trial of injectable streptomycin and ciprofloxacin. The latter has proved

extremely useful in our study. Those with enterocutaneous fistulae may need total parenteral nutrition along with antitubercular treatment.

Every effort must be made to control the disease at an early stage which is responsible for such torment to the patient and the society as a whole.

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References

1. Vij JC, Malhotra V et al: A clinicopathological study of abdominal tuberculosis. Indian Jtuberc 1992; 39: 313-20.
2. Bhansali SK, Desai AN: Abdominal tuberculosis: clinical analysis of 135 cases. Indian J Surg 1968; 30: 218-32.
3. Bhansali SK, Sethna JR: Intestinal obstruction: A clinical analysis of 348 cases. Indian J Surg 1970; 32: 1-7.
4. Singhal SL,Tondox PL et al: Abdominal tuberculosis. Indian J Surg; 1964; 26: 440-50.
5. Suneet Sood, Anurag Krishna: Surgical diseases in trophical countries. Published 1996 First edition.
6. K.M. Gondal, AFA Khan: Changing patterns of abdominal tuberculosis: Pakistan J Surg, Vol.11, No.2, Apr-Jun 1995: 109-113.
7. Baluch M, Tufail M et al: Abdominal tuberculosis: A varied presentation: Pak Jsurg 1993; 9(1): 8-12.
8. Mahmood MT,Asghar RG: Abdominal tuberculosis:. A 20 years experience. Pak Jsurg 9(1): 13-19.
9. Lingenfelser T, Zak J, Marks IN et al: Am 5 gastroenterol; 1993; 88(5): 744-50.
10. Voight MD et al: Lancet 1989; 1(8641): 751-4.Bhargava DK et al: Peritoneal tuberculosis; laparoscopic patterns and its diagnostic accuracy. aM J Gastroenterol. 1992;; 87: 109-12.
11. Wilaritana P et al: Does laparoscopy have a limited role in diagnosis of fibroadhesive tuberculous peritonitis? Southeast Asian J Trop Med Public Health 1993; 24: 762-65.
12. Al Qurain AA et al: Am J Gastroenterology 1993; 88(1): 75-9.
13. Kochhar R, Rajvanshi A et al: Colonofibroscopic fine needle aspriation cytologyin the diagnosis of ileocaecal tuberculosis. Am J Gastroenterol 1991; 86: 102-4.
14. Bhargava DK, Shriniwas et al: Intestinal tuberculosis: bacteriological study of tissue obtained by colonscopy and during surgery. J Trop Med Hyg 1985; 88: 249-52.
15. Bhargava DK, Tandon HD et al: Diagnosis of ileocaecal and colonic tuberculosis by colonoscopy. Gastrointest Edosc 1985; 31: 68-70.
16. Das P, Shukla HS: Clinicla diagnosis of abdominal tuberculosis. Br J Surg 1976; 63: 941-6.
17. Manohar A Simjee AE et al: Symptoms and investigative findings in the 145 patients with tuberculosis peritonitis diagnosed byperitoneoscopy and biopsy over a 5- year period.Gut: 1990; 10: 1130-2.
18. Tariq N: Abdominal tuberculosis. The surgical audit of its presentation. Pak Jsurg 1993; 9(3): 82-86.
19. Bilbo Garay J, deLetona JM et al: Abdominal tuberculosis today. A review of 46 cases. rEv. ClinEsp; 1992; 191(1):: 19-24.
20. Underwood MJ, Thompson MM et al.: Presentation of abdominal tuberculosis to general surgeon: Br. J Surg 1992; 79(10): 1077-9.
21. Peh WGC, Khoo TK: The varied clinicoradiological rpesentations of abdominal tuberculosis. Asian Med J: 1989; 32(2): 99-108.
22. Aston NO: De Costa AM: Tuberculous perforation of the small bowel. Post Grad J: 1985; 61: 251-2.
23. Kapoor VK, Kirplani AK et al: Tuberculous perforation of the small intestine Indian Jtuberculosis; 1986. 33: 188-9.