Proceeding S.Z.P.G.M.I vol: 6 (1992), pp. 51-55.

Abdominal Tuberculosis, A Varied Presentation

Naseer Baluch, M. Tufail, K. Durrani, Mahmood Ahmad
Department of General Surgery, Shaikh Zayed Hospital, Lahore.

SUMMARY

Abdominal Tuberculosis presents to the general surgeon in one of the three forms: 1, Intestinal Obstruction 2, Tuberculous peritonitis 3, abdominal mass. In a review of patients presenting with intestinal obstruction (Acute or sub acute). Over 2 years period at Shaikh Zayed Hospital, Lahore, 30 cases were found to have intestinal tuberculosis out of a total 100 of intestinal obstruction studied All patients were diagnosed on exploration with histopathological evidence of tuberculosis and or demonstration of A.F.B. in the lesion. The mean age was 34.9 years, male to female ratio 2:1 86% of the patients had primary intestinal tuberculosis whereas 14% are considered to be suffering from secondary intestinal tuberculosis. Majority of the patient (66%) had single or multiple strictures involving the triminal ileum and ileo-caecal region, 20% of the patients were found to have mass in the ileo-caecal region and perforation was seen in 14% of the cases. Primary resection of the tuberculous lesion was carried out in 28 patients. Stricturoplasty was performed in the remaining 2 patients. Hospital mortality was zero and major post op. complications were noted in 8%. All patients received standard anti-tuberculosis treatment for a period of 12 months, follow up record is available on 26 patients. All 26 patients have so far completed the anti-tuberculosis medication without any ill effects. No patient has so far presented with recurrent problem of obstruction.

INTRODUCTION

Tuberculosis is one of the earliest diseases known to mankind. Hippocrates in the 4th century BC bestowed the name "PHTHISTS" meaning wasting. Hippocrates warned that "Phthisical person dies if diarrhoea sets in"[1]. John Hunter in one of his famours lecture's on the principles of surgery in 1786 for the first time described the features of abdominal tuberculosis, when he said, "I have seen the whole intestine adhering to the peritoneum seemingly from a scrofulous cause and having scrofulous tumours and suppuration in them also, the symptoms were tightness of the belley without pain and castiveness; at times purging[2]. Despite advances in drug therapy and better diagnostic facilities tuberculosis remains a major health problem in the developing countries especially Africa and the Subcontinent (India and Pakistan)[3]. Tuberculosis has been called a great mimic, particularly so in the abdomen, where its protean manifestations can resemble a variety of diseases[4]. There has been a recent increase in the incidence of abdominal tuberculosis in United Kingdom, related to the influx of immigrants from developing countries[5]. The most frequent source of infection is ingestion of food containing tubercle bacilli, especially milk and in the infected sputum. With wide spread pasteurization of milk and disappearance of bovine tuberculosis in developed countries, infected milk is no more a significant cause[3]. Clinical presentations, Radiological features resembles with a variety of diseases like crohns enteritis, carcinoma, ulcerative colitis and malabsorption syndrome. Traditionally the treatment has been conservative in the absence of complications. Surgery is indicated with the onset of complications, including obstruction of small and large bowel, fistula formation, perforation with localized or generalized peritonitis and haemorrhage[2,3].

The present study focuses attention on patients

with abdominal tuberculosis admitted to the Department of General Surgery, Shaikh Zayed Hospital mainly for (Acute abdomen and or bowel obstruction) over a period of two years.

MATERIALS AND METHOD

From March 1988 to February, 1990 (Approx. 2 years). Thirty (30) patients of abdominal tuberculosis were managed in the department of Surgery. All these patients fulfilled one or more of the selection criteria for the diagnosis of abdominal tuberculosis as under[6]:.

Criteria for diagnosis

1. Positive histology (Typical granulomas).
2. Demonstration of acide fast bacillus.
3. Response to anti-tuberculosis chemotherapy.

Chest X-Rays were performed in all patients. Patients with normal chest X-Rays (Without any active or healed focus of tuberculosis) were considered as primary intestinal tuberculosis.

Barium meal follow through studies were performed in 10 patients who presented with subacute bowel obstruction. Mantoux test was performed in 10 patients. All patients underwent exploration which were performed by one of the three consultants (M.A, K.D., M.T.).

Chemotherapy

Post operatively all the patients were prescribed with standard anti-tuberculous chemotherapy for a period of one year[1].

RESULTS

Age and Sex incidence

a. The age range of patients with intestinal tuberculosis was 15-60 years with a mean age of 34.9 years. The male : Female ratio 2:1.
b. Out of 30 patients 26 patients (86%) were considered to have primary intestinal tuberculosis and 4 patients (14%) with remarkable chest X-Rays were categorized as secondary tuberculosis.

Mode of Presentation:

17 patients (56%) presented with the symptoms and signs of subacute intestinal obstruction, while 13 patients (44%) presented with S/S of acute intestinal obstruction.

The duration of symptoms prior to admission varied considerably between 4 days to one years.

Laboratory

1. Majority of patients were deficient in electrolytes.
2. E.S.R was raised in 22 patients. (66%).
3 Mantoux test was positive in 6 patients (60%) out of 10.

Radiology

Plain X-Rays of abdomen revealed distended bowel loops and air fluid levels in 20 patients suggestive of bowel obstruction.

Barium meal follow through study showed one or more of the following features - mucosal oedema of the small bowel, Stierlin's sign, narrowing of distal ileum and ileo-caecal region (Fig. 1). Suggestive of intestinal tuberculosis. Two patients who had barium enema study prior to admission revealed narrowing of ileo-caecal region.

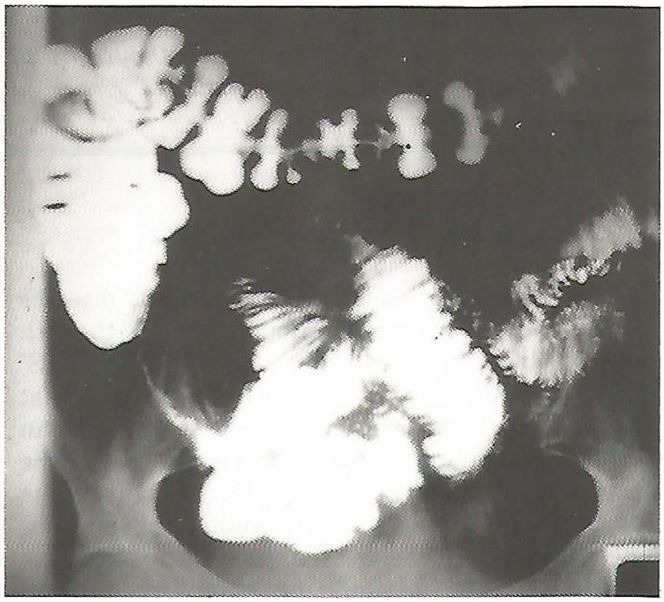

Fig. 1:
Barium meal follow through study showing Stierlin's sign.

Operative findings and procedures

All the thirty patients underwent laparotomy. On exploration the following findings were noted (Table 2).

Site of Involvement:

The most common site was distal ileum in 22

patients (73%). In 8 patients (27%) ileo-caecal region was involved. No patient had colonic involvement alone. The jejunum was also involved in 3 patients (7%) of cases (Table 3).

Table 1: Clinical features at the time of admission.

S/S	No. of Patients	Percentage
Abdominal pain	30	100
Constipation	20	66
Abdominal distension	18	60
Nausea/Vomiting	16	53
Tenderness	22	73
Fever	15	50
Loss of weight	8	26
Abdominal mass	5	16
Night sweat	5	16
Diarrhoea/Constipation	2	7

Table 2: Operative findings.

Findings	No. of Patients	Percentage
Strictures Single -13 Multiple - 7	20	66
Mass ileo-caecal region	6	20
Perforation Ileo-caecal region (2) Terminal ileum (2)	4	14

Table 3: Site of involvement.

Site	No. of Patients	Percentage
Distal Ileum	18	60
Ileum + Jejunum	4	13
Ileo-caecal region	8	27

Following surgical procedures were performed. Resection of ileum (10-20 cm) and end to end anastomosis was performed in 14 patients (47%) limited right hemicolectomy and ileocolic anastomosis was performed in 7 patients (23%).

Right hemicolectomy and end ileostomy was performed in 3 patients (10%). Loop ileostomy and stricturoplasty carried out in two patients each (Table 4).

Table 4: Procedures.

Surgical Procedures	No. of Patients	Percentage
Resection of ileum (10-20cm) and end to end anastomosis	14	47
Limited right hemicolectomy and ileocolic anastomosis	7	23.2
Right hemicolectomy and end ileostomy	3	10
Loop ileostomy	2	6.6
Exploratory Laparotomy and lymph node biopsy	2	6.6
Stricturoplasty	2	6.6

Pathology

In all the 30 patients surgical specimens were subjected to histopathology with the following results:

The hypertrophic variety was found in 22 patients (73%), of the remaining 8 patients (27%), ulceration and perforation was found in 4 patients and ulcerohypertrophic form in 4 patients (Fig. 2,3).

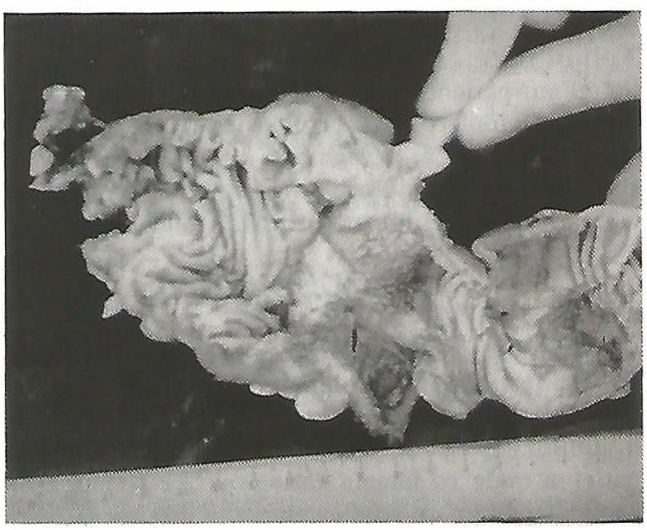

Fig. 2: Specimen showing ulcerohypertrophic form.

Typical casseating granulomas were demonstrated in all patients (100%).

Z.N. stain for acid fast bacillus was positive in 22 patients (73%).

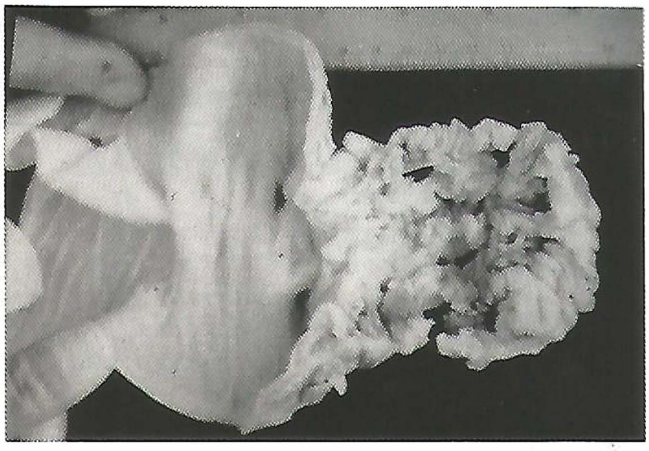

Fig. 3: Specimen showing ulceration and perforation.

Morbidity and Mortality

No hospital mortality occurred. All the 30 patients spent a total of 304 in hospital days: range 5-20 days with an average stay of 10 days. Major postoperative complications were noted in 3 patients (8%) in the form of residual abscess (2 patients) and wound dehiscence (1 patient). Minor complications in the form of atelectasis, wound infection occurred in 10 patients (30%).

Follow up

Four patients were lost during the follow up. 26 patients completed A.T. chemotherapy for 1 year. All these patients (26) have shown progressive improvement and have remained asymptomatic. No delayed complications were seen during the follow up.

DISCUSSION

Intestinal tuberculosis has been reported in all age groups, but most commonly occurs in the third and fourth decade. the mean age of 34.9 in the present study reflects this. In the present series of 30 patients male to female ratio was 2:1 It has been shown from many studies that the disease is more common in males in Western countries, while the disease occurs equally in both male and females or even more in females in some of the developing countries[7]. Intestinal tuberculosis can affect any part of gastrointestinal tract, but more common site of involvement are distal part of ileum and ileo-caecal region. Occasionally it may involve unusual sites i.e. appendix and anorectal region[8]. In the present study 74% of the lesions were found in distal ileum, and ileo-caecal region was involved in 26% of cases. Intestinal tuberculosis often produce vague symptoms, which is responsible for the delay in diagnosis[9]. In the present study all the 30 patients (100%) presented with the symptoms and signs of bowel obstruction (56% with S/S of subacute and 44% with S/S of acute bowel obstruction), which is highest as far as the published results are concerned. (Table 5.)

The highest incidence of Bowel Obstruction in patients with Abdominal Tuberculosis has been from the Indian Subcontinent Table 5.

Table 5: Incidence of bowel obstruction (Acute/subacute) in abdominal tuberculosis.

	Year	Study	Percentage
1.	1965	Gill and Eggle storm	3
2.	1972	Parkash (Delhi)	70 (159/212)
3.	1976	T.I, T.K. (Malaysia)	6.3
4.	1979	Mukerjee P. (India)	87 (436/500)
5.	1992	Present study (Lahore)	100 (30/30)

References for the table.
Ref. for 1-2 15
Ref. for 3 10
Ref. for 4 16

Abdominal pain, constipation, abdominal distension, nausea and vomiting and fever as the most common presenting symptoms, are in agreement with other published series[6]. Our finding of higher prevalence of primary intestinal tuberculosis is in accordance with most of other studies conducted in developing countries[12]: while studies from U.K. and U.S.A shows secondary tuberculosis more common[13] (Table 6).

Table 6: Relationship between pulmonary and intestinal tuberculosis.

Country	Year	Period of Study	No.of Cases	Primary (%)	Secondary (%)
S. Africa	1973	1962-1972	59	66	34
U.K	1976	1970-1975	11	45	55
India	1976	1967-1973	93	72	28
India	1978	1957-1977	300	61	39
U.S.A	1980	1956-1977	15	20	80
Pakistan	1992	1988-1990	30	86	14

Unfortunately, there is no pathognomonic test for intestinal tuberculosis Montoux test was performed in 10 patients and positive results were obtained in 6 (60%) patients. Contrast studies were found more helpful in the present study. The features of mucosal oedema. Stierlins sign, and string sign were present in 8 patients (80%)[8,10].

These radiological findings are difficult to differentiate from those of Crohn's disease. As Crohn's disease is a rare entity in our region; these radiological features would be considered more in favour of intestinal tuberculosis. The absolute diagnosis of abdominal tuberculosis requires either positive histological or bacteriological proof. A laparotomy is probably the most reliable, may as full examination of the peritoneal cavity can be carried out and biopsies taken with ease[10,14]. In experienced hands, laparoscopy may be the procedure of choice.

As regards chemotherapy of Intestinal. T.B. most of the series recommend 12 months treatment[2,4].

In the present study all the patients were given A.T.T. for 12 months. One year follow up showed no significant drug side effects and patients showed progressive improvement. A recent study from India has shown beneficial results with short course chemotherapy for a period of 6 months[1].

The zero mortality in this study is significant. The mortality rate as has been observed and quoted from various studies ranges from 6% to 45%[7,9,12].

This is due to our special interest in the field of abdominal surgery and reflects, better preoperative management of the patients and involvement of the consultant staff in performing various operative procedures, keeping the safety of the procedures of foremost importance. Hence diversion was carried out in 5 patients (16%) in the form of ileostomy in preference to primary anastomosis/closure.

Based on the above experience, we wish to make the following recommendations:

1. Bowel obstruction especially subacute or acute on chronic, should have a workup aimed at ruling in or out intestinal tuberculosis.
2. Patients presenting with vague bowel symptoms especially sub acute obstruction with fever, and weight loss should have contrast studies to rule out intestinal tuberculosis and even in selected cases exploratory laparotomy may be indicated.
3. In the presence of perforation of the bowel with faecal peritonitis and intra abdominal sepsis, sometimes ileostomy may be a safe procedure than primary anastomosis.

REFERENCES

1. **Bala Subramanim R, Permchandran R, et al.** Interium results of controlled clinical study of Abd Tuberculosis. *Ind J TB 1989;* **36**: 117-21.
2. **Addison NV.** Abdominal tuberculosis, A disease revived. *Annals of the Royal College of Surgeons of England 1983;* **65**: 105-11.
3. **Kapoor VK, Sharma LK.** Abdominal tuberculosis. *BJS 1988;* **75(1)**: 2-3.
4. **Cook NJ.** Treatment of tuberculosis. **B Med J 1985; 291**: 494-7.
5. **Sharp JF, Goldman M. Abd.** Tuberculosis in East Birmingham. *Postgraduate Med J 1987;* **63**: 539-42.
6. **Kaufman HD, Donovan I.** Tuberculous disease of the abdomen. *Journal of the Royal College of Surgeons of Edinburgh 1977;* **19**: 377-80.
7. **Homan WP, Craft WR, et al.** A forty three (43) years experience with tuberculous Enterocolitis. *World J Surg 1979;* **1**: 245-50
8. **Peh WCG, Khoo TK.** The varied clinicopathological presentation of Abd. Tuberculosis. *Asian Med J 1989;* **32(2)**: 99-108.
9. **Wells AD, Mothover JMA, et al. abd.** Tuberculosis still a problem today. *J R Soc Med 1986;* **79**: 149-53.
10. **T.I. T.K. Young NK.** The pattern of intestinal obstruction in Malaysia. *Br J Surg 1976;* **63**: 963-65.
11. **Sherman S, Rahwedder JJ, et al.** Tuberculous enteritis. *Arch Int Med 1980;* **140**: 506-508, 1980.
12. **Kakar A, Aromyia CR, et al.** Ac. perforation of small in test. due to T.B., Aust. & *Newzeland J Surg 1983;* **53**: 381-3.
13. **Dineen P, Holman WP, et al.** Tuberculous peritonitis. *Ann Surg 1976;* **189**: 717-23.
14. **Guth AA, Kim U.** The reappearance of Abd. tuberculosis. *Surg Gynae Obst 1991;* **122**: 432-6.
15. **Ellis.** Acute Intestinal obstruction in Schwartz Seymour 1, Ellis Harold, (eds) Maingots Abdominal operation, 9th edt. Appleton Century Crofts. New York. 887, 1989.
16. **Mukerjee P, Singal AK.** Intestinal Tuberculosis 500 operated cases. *Proc Assoc Surg E Afr 1979;* **2**: 70-5.

The Authors:

Naseer Baluch,
Registrar
Department of General Surgery,
Shaikh Zayed Hospital,
Lahore.

Mahmood Ahmad
Professor,
Department of Surgery,
Shaikh Zayed Hospital,
Lahore.

M. Tufail,
Assistant Professor,
Department of General Surgery,
Shaikh Zayed Hospital,
Lahore.

K. Durrani,
Associate Professor,
Department of General Surgery,
Shaikh Zayed Hospital,
Lahore.

Address for Correspondence:

Khalid M. Durrani
Department of General Surgery,
Shaikh Zayed Hospital,
Lahore.