

Our Experience in the Management of Intestinal Tuberculosis

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A descriptive study of 50 cases was conducted at Surgical Unit I, Sir Ganga Ram Hospital, Lahore from May 2001 to Jan 2003 to evaluate clinical presentation of intestinal tuberculosis. Thirty eight patients were females and twelve males. Common presentation in operated cases were abdominal pain, tenderness, vomiting, distension and absolute constipation. While in non-operative cases presentation was vague abdominal pain, fever, weight loss, constipation and diarrhoea. Evidence of tuberculosis was achieved by ESR, X-ray chest, mantoux test and histopathology. These patients were managed either surgically or conservatively by anti-tuberculous chemotherapy. Out of fifty patients, forty patients were treated with combined medical and surgical treatment while ten cases were managed by medical treatment only. One patient expired with a mortality rate of 2.5% among operated cases. This patient developed faecal fistula due to leakage from suture line. Cause of death was poor nutrition, debility, anaemia and electrolyte imbalance.

Key Words: Intestinal tuberculosis, Right hemicolectomy, Anti-tuberculous treatment

Tuberculosis is a disease prevalent all over the world. An estimated 10 million peoples are infected with tuberculosis and 3 million die of it annually¹. The situation is worse in under developed countries where poverty, overcrowding and unhygienic circumstances are the main factors for spread of this disease¹.

Tuberculosis is still one of the most widespread infection known to mankind. Although lung is the predominant site of disease, a sizeable population in Pakistan gets intestinal disease. Clinical presentation, radiologic and laparoscopic examination provides clues to the diagnosis³.

The primary variety of gastrointestinal tuberculosis results from the ingestion of milk contaminated by *Mycobacterium bovis*. The secondary type of intestinal tuberculosis is due to swallowing infected sputum (*Mycobacterium tuberculosis human type*)⁴.

Intestinal tuberculosis may present to the general surgeon in different forms as: chronic abdominal pain, small intestinal obstruction (acute or subacute), tuberculous peritonitis, abdominal mass right iliac fossa and tuberculous ascites. The systemic manifestation of this disease include chronic ill health, anorexia, fever and night sweats, dyspepsia and weight loss⁴.

Diagnosis of intestinal tuberculosis can be made confidently in most of the cases. There may be a small group of patients where diagnosis cannot be made despite appropriate investigations and a therapeutic trial of anti-tuberculous treatment (ATT) may be considered with close monitoring according to a pre-fixed protocol⁵.

Most patients with intestinal tuberculosis do not have associated pulmonary tuberculosis⁶. Due to delay in the diagnosis, majority of patients present with complications, thus necessitating surgical intervention. Despite the claims made by various agencies regarding control of tuberculosis, it is still common in Pakistan⁷.

This study of 50 cases was carried out to evaluate the presentation of intestinal tuberculosis according to age and

sex and to identify the involvement pattern of different viscera in intestinal tuberculosis.

Patients and methods

Fifty patients admitted in Surgical Unit-I, Sir Ganga Ram Hospital, Lahore from May 2001 to January 2003 were included in the study.

Inclusion criteria for the study were:

1. All patients admitted with tuberculosis through OPD and emergency.
2. Patients with no other systemic complications like renal failure or chronic liver disease.
3. Patients with age above 12 years.

A thorough clinical examination was carried out in all patients. Various investigations like blood complete and urine examination, blood sugar, blood urea, serum creatinine, X-ray chest, X-ray abdomen erect & supine and Matoux test were done in each patient. Abdominal ultrasound was also carried out. Specific tests like PCR were performed in selected patients when required.

Patients who needed surgical intervention and presented either with signs and symptoms of acute intestinal obstruction, intestinal perforation with peritonitis or mass in right iliac fossa. Here abdominal cavity was opened by mid-line incision. Most common site involved was ileum. Surgical procedures included adhenolysis, resection anastomosis, right hemicolectomy, stricturoplasty, repair of perforation, loop ileostomy, omental or lymph node biopsy and exteriorization.

Histopathological examination of the resected specimen or mesenteric lymph node were performed in all patients who underwent surgery. Final diagnosis was confirmed by histopathology.

The patients with vague abdominal pain, fever, weight loss, constipation or diarrhoea who had no definitive indication of surgery were placed in the other group. Evidence of tuberculosis was obtained by ESR,

chest X-ray, USG and Mantoux test. These cases were managed conservatively by anti-tuberculous chemotherapy.

All the patients treated either surgically or conservatively were prescribed anti tuberculous chemotherapy for nine months. They were followed up to look for:

- Improvement in weight of body
- Decrease in intensity and frequency of pain
- Decrease in severity of fever
- Improvement in appetite and body weight
- Development of jaundice or peripheral neuropathy
- Improvement in ESR

Results

In this study of 50 cases, 38 were females (76%) and 12 were males (24%). Male to female ratio is 1:3.2. The age range was between 12-70 years and mean age was 28 years. Eleven patients (22%) were in the second decade of life, twenty six (52%) in third decade, six (12%) in fourth decade, two (4%) in fifth decade, two (4%) in sixth decade and three (6%) in 7th decade of life. Eight patients were admitted from outpatient department and forty two were admitted through emergency. Clinical presentation in operated cases is shown in Table 1.

Table 1: Symptoms in Operated Cases (n = 40)

Symptoms	n=	%age
Abdominal pain	36	90.0
Weight loss	33	82.5
Abdominal distension	32	80.0
Vomiting	32	80.0
Absolute constipation	32	80.0
Fever	24	60.0
Night sweats	11	27.5
Abdominal mass	8	20.0
Diarrhoea	2	5.0

Among operated cases, common symptoms and signs were abdominal pain, tenderness, vomiting, distension and absolute constipation. Abdominal tenderness was present in thirty eight (95%) cases. X-ray abdomen erect show multiple air and fluid levels in 32 (80%) cases. ESR was raised in fourteen (35%) patients. Ultrasound was done in eight (20%) cases, X-ray chest was done in every case but positive foci were present in eleven (27.5%) cases. PCR was done in eight (20%) operated cases. Among non-operative cases, barium studies were done in two cases (20%) and Montoux test was done in seven (70%) cases. X-ray chest was done in every patient but positive foci were present in 3 cases (30%).

Ten patients (20%) were managed conservatively i.e., with standard nine-months regimen of anti-tuberculous chemotherapy. Those patients who underwent exploratory laparotomy (operative cases) were forty (80%) in number, surgery followed by anti-tuberculous chemotherapy. Various surgical procedures done are shown in Table 2.

Table 2: Surgical Procedures (n = 40)

Name of operation	n=	%age
Adhenolysis + biopsy	11	27.5 (omental lymph node biopsy)
Right hemicolectomy	8	20.0
ileocolic anastomosis		
Resection anastomosis	8	20.0
Loop ileostomy	5	12.5
Repair of perforation	4	10.0
Stricturoplasty	2	5.0
Exteriorization	2	5.0
Total	40	100

In five patients, loop ileostomy (12.5%) and in two patients (5%) exteriorization was done. They were operated, three months later after improvement of their general health. Here closure of ileostomies was done. One patient expired with a mortality rate of 2.5% in operated cases. Cause of death was fluid, electrolyte imbalance and late approach to the hospital. Site of involvement is shown in Table 3.

Table 3: Site of Involvement (n = 40)

Site	n=	%age
Ileum	23	57.7
Jejunum	9	22.5
Ileocaecal	8	20.0
Total	40	100.0

Distal ileum was the most common site of involvement followed by jejunum. Resected tissues after operation were sent for histopathological examination for confirmation of diagnosis.

Discussion

The disease may present with a wide variety of non specific symptoms and signs. Moreover, most patients with intestinal tuberculosis do not have associated pulmonary tuberculosis⁸. In some western countries, patients with HIV infection developed intestinal tuberculosis. Surprisingly, in USA, most of the cases of intestinal tuberculosis have been discovered during laparotomy for mistaken diagnosis of carcinoma or Crohn's disease.

In this study, 42 (84%) patients were admitted through emergency. It shows delay in the presentation and diagnosis of intestinal tuberculosis resulting in acute abdomen. Baluch has also a similar experience⁹. Eight patients (16%) were admitted through out patients department. In this study, pulmonary tuberculosis was present in 3 out of 10 (30%) non operated patients and 11 out of 40 (27.5%) operated patients which is higher than some other studies as Baluch⁹ and Mahmood¹⁰ (15%).

In this study, abdominal pain was the most common presenting complaint in 46 (92%) patients. Weight loss in 42 (84%) patients, abdominal distension in 38 (76%) patients, constipation (absolute or relative) in 37 (74%) patients, fever in 32 (64%) patients, vomiting in 38 (76%)

patients. Night sweats in 11 (22%) patients, abdominal mass in 8 (16%) patients, diarrhoea in 4 (8%) patients. These symptoms are consistent with other published series although some fluctuation⁹. Pallor in this study was present in 42 (84%) patients. Anorexia and malabsorption could be the reason of pallor (same as recorded by Ahmed¹¹). Montoux test was positive in seven out of 8(85%), patients who were admitted through outdoor. Active pulmonary tuberculosis in chest X-ray was present in 14 (28%) patients, similar findings were recorded by Ahmad¹¹. Plain X-ray abdomen in supine and erect posture was done in all patients admitted through emergency. USG and barium meal studies were carried out in all patients admitted through outdoor. Laparoscopy was done in only one patient. PCR was done in all patients admitted through outdoor having mass right iliac fossa. It was positive in all cases (100%) thus establishing the diagnosis, same results reported by Hameed¹².

Anti-tuberculous chemotherapy was the main treatment in the management of intestinal tuberculosis. Surgery is indicated for relief of obstructive symptoms and to clarify the diagnosis in doubtful cases. In this study, surgery was done in 40 (80%) patients and the most common finding in laparotomy was matted omentum and intestine (32.5%) and perforations (30%). In the study of Ahmad¹³, it is (26%) and (39%) respectively. Strictures was present in seven patients (17.5%) (same as Ahmed's study (17%)¹³. Mass in right iliac fossa was present in 8 patients (20%). Distal ileum was involved in 23 (57.5%) patients, it was consistent with Nair's Naration¹⁴. Distal ileum was common site also in Baluch study⁹. Jejunum was involved in nine (22.5%) patients and ileo-caecal region in 8 (20%) patients.

Post operative complications like wound infection was present in six (15%) patients and jaundice in four (10%) patients, but these were managed conservatively. Mortality in this study was one (2.5%) operated patient. Baluch has zero mortality⁹. Lingenfelter had a mortality of 7.3%⁹ and Dandapat had a postoperative mortality of 6.4%¹⁵.

In the light of this study, we recommend a better communication and early referral system from general practitioner to the surgeon for better management of the disease and to prevent complications. Also a therapeutic trial of anti-tuberculous chemotherapy can be given for at least six weeks.

Conclusion

Intestinal tuberculosis is more common in females, common in third decade of life. Common presentations were abdominal pain, abdominal distension, vomiting, constipation, weight loss, pallor and mass in RIF, fever

and sometimes diarrhoea. It can involve any organ in the abdomen but most common is the distal ileum.

The symptoms and signs are non-specific and the investigations prone to be non-pathognomonic, but histopathology proves to be the final investigation of choice.

Because patients with intestinal tuberculosis usually reach quite late to surgical department often with complications, so surgery is reserved for complications or to clarify the diagnosis in doubtful cases. Anti-tuberculous chemotherapy is the main stay of treatment and continued for at least 9 months while follow up is frequently needed during this period.

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