

ABDOMINAL TUBERCULOSIS: REVIEW OF 78 CASES

By

*Abdulrahman Sibiany, FRCS(Ed) *, Faisal Al-Mashat, FRCS(I & Ed), FICS *, Ahmad Kensarah, FRCS(Ed) *, Abdul Rahman Meccawi, FRCS (Ed) Basim Awan, FRCS (C) *, Nazwal Al-Ghamdi, MRCP *, Nazwal Sharwani, MRCP **, Fayza Fadl Elahi, FRCS **, Shahid Barlas, FRCPE ***

Departments of Surgery and Medicine, King Abdulaziz University Hospital, Department of Medicine, King Abdulaziz Hospital & Oncology Centre

Seventy-eight patients with abdominal tuberculosis (TB) were admitted to the medical and surgical departments at two major teaching hospitals in Jeddah. during the period from January 1991 to August 2001. They were young patients with average age of 31 years. They all belonged to low socio-economic class. The majority of patients presented with non-specific symptoms which included fever, weight loss, abdominal pain, vomiting and change of bowel habit. There was a predilection for a single organ involvement. The peritoneum being the commonest site (61.50%) followed by the liver (16.60%), mesenteric lymph nodes (10.20%), small bowel (3.80%) and colon (2.60%). The spleen, appendix, pancreas and perineum were involved in 1.3% (one case each). Abnormal chest x-ray suggestive of active or old tuberculosis and positive Mantoux test were present in 41% and 14.60% of patients respectively. Laparoscopy was helpful in establishing the diagnosis of peritoneal tuberculosis in 43 patients. Seven patients (8.90%) required various surgical procedures. The outcome of treatment with anti-TB chemotherapy for 6 months was successful. One patient developed post-operative abdominal fistulae and two patients died. The morbidity was 1.3% and the mortality was 2.56%.

INTRODUCTION

Recently there is a worldwide resurgence of tuberculosis including the western hemisphere. The most important causes of this worldwide increase in T.B. are : non-compliance with control programmes; inadequate diagnosis and treatment; immigration; endemic human immunodeficiency virus (HIV); ambulatory and self-administered treatment; increased longevity; low socio-economic conditions, needles sharing and primary drug-resistance. The literature about abdominal tuberculosis is extensive and well documented. Abdominal T.B. is a common form of extrapulmonary TB. It can affect any abdominal organ or structure particularly lymph node, ileocaecum, liver, spleen and others. It is a great mimicker and can confuse the physician with other conditions. It should always be considered in the differential diagnosis of inflammatory bowel disease, intestinal infections and malignancies. The present study was conducted to highlight the clinical pattern of abdominal tuberculosis and the role of various diagnostic modalities. The morbidity was 1.3% and the mortality was 2.56%. We emphasise the need for a high index of suspicion and

familiarity with the disease in order not to delay the diagnosis and avoid unnecessary operations.

PATIENTS AND METHODS

This is a retrospective analysis of seventy-eight patients with histologically proven abdominal tuberculosis admitted at two major teaching hospitals in Jeddah from January 1991 to August 2001. The patients were included in the study (inclusion criteria) if they have fulfilled one or more of the following diagnostic criteria: (a) Histological evidence of caseating granuloma, (b) Bacteriological and/or Histological evidence of acid fast bacilli (AFB) in the tissue or ascitic fluid, (c) Positive culture for mycobacterium tuberculosis from tissue or ascitic fluid, (d) Therapeutic response to standard anti-T.B. chemotherapy.

The records of all eligible patients including age, gender, nationality, clinical presentation, sites of involvement, Mantoux test, surgical procedures, treatment with anti-tuberculous chemotherapy, bacteriological examinations, radiological imagings and pathological specimens were reviewed. The radiological procedures

used were chest x-ray, plain abdominal radiographs, gastrointestinal contrast studies (barium meal follow-through and barium enema) and ultrasonography.

RESULTS

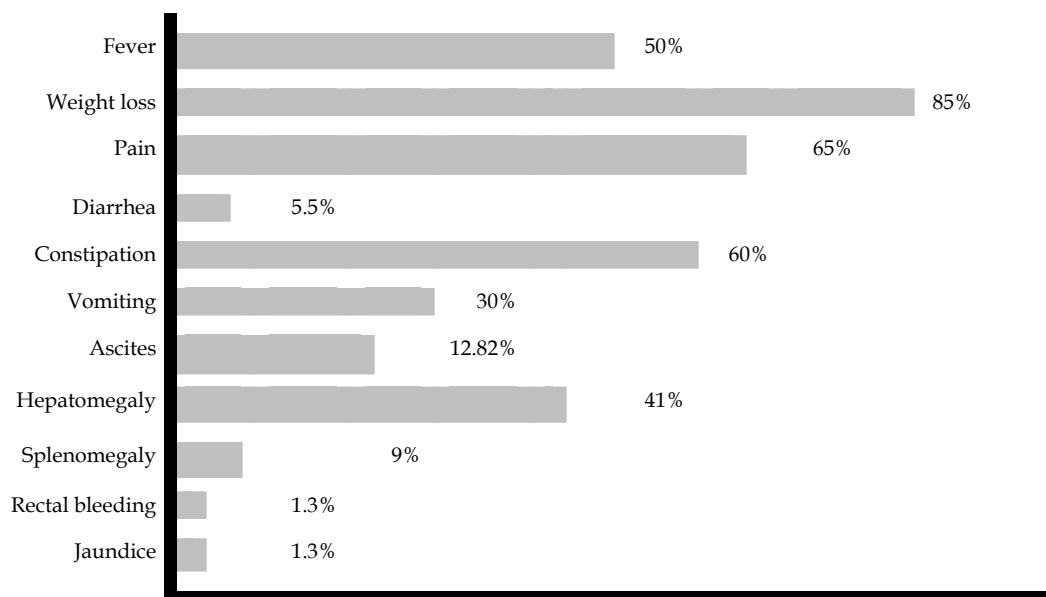
Seventy-eight patients with abdominal tuberculosis were studied. The ages of the patients ranged from 8 years to 62 years with a mean of 31 years. Male to female ratio was 1:1.7. Eight patients were Saudi and the remaining 70 patients were expatriates. All patients were of low socio-economic class.

The clinical presentations were diverse and non-specific (Table 1). The most common symptoms were weight loss, abdominal pain, fever, vomiting and change of bowel habit. Hepatomegaly and splenomegaly were present in 41% and 9% of patients, respectively. Ascites was detected in 10 patients (12.82%). One patient with perianal fistula presented with rectal bleeding while another patient with appendicular tuberculosis was admitted as acute abdomen. The patient with pancreatic tuberculosis presented with obstructive jaundice. The distribution of tuberculosis among various abdominal organs and structures are shown in (Table 2). There was a predilection for single organ involvement. The peritoneum was the commonest site 61.50%, followed by liver (16.60%); mesenteric lymph nodes (10.20%); small bowel (3.80%); colon (2.60%); spleen (1.30%); appendix (1.30%); pancreas (1.30%) and perianal region (1.30%). Various diagnostic procedures were used for the evaluation and confirmation

of T.B. (Table 3) illustrates the number and percentage of diagnostic procedures and their positive yield in abdominal T.B. Chest x-ray showed that 32 patients (41%) has co-existing active or old pulmonary tuberculosis. Mantoux test was positive in 11 patients (14.10%). Abdominal ultrasound was done for 15 patients and detected subclinical ascites, mesenteric lymph nodes and masses. Diagnostic laparoscopy and biopsy established the diagnosis correctly in 43 patients. Barium follow through and barium enema were done for three and two patients, respectively. Laparotomy was performed for 6 patients (7.69%). Seven patients (8.97%) required various surgical procedures including resection-anastomosis, By-pass and biopsies. One patient developed post-operative intestinal fistulae and died.

Caseating granuloma was seen in 66 patients (84.61%). Acid-fast bacilli were seen in five patients and the mycobacterium culture was positive in eight patients. All patients were routinely tested for HIV serology. Only two patients turned out to be HIV positive. One patient with systemic lupus erythematosus and another one with chronic renal failure developed concomitant liver tuberculosis. All patients received a 6 months course of anti-tuberculous chemotherapy (Rifampicin, INH, Pyrazinamide and Ethambutol). The two patients with HIV infections continued therapy for 9 months. The results of anti-tuberculous chemotherapy were successful. One patient died with liver failure.

Table(1): Frequency of clinical features in 78 patients with gastrointestinal tuberculosis



Table(2): Distribution pattern of abdominal tuberculosis in 78 patients

<i>Site</i>	<i>No. of Patients</i>	<i>Percentage</i>
Peritoneum	48	(61.50 %)
Liver	13	(16.60 %)
Mesenteric lymph nodes	8	(10.20 %)
Small bowel	3	(3.80 %)
Colon	2	(2.60 %)
Appendix	1	(1.30 %)
Pancreas	1	(1.30 %)
Perianal	1	(1.30 %)
Spleen	1	(1.30 %)
TOTAL	78	(100 %)

Table(3): Gastrointestinal Tuberculosis :Number of diagnostic procedures and their positive yield in 78 patients

<i>Investigation/ Procedure</i>	<i>No. of Positive</i>	<i>%</i>
Chest x-ray : active old TB	32	41.00
Mantoux test	11	14.10
Ultrasound	15	19.23
Barium follow through	3	3.85
Barium enema	2	2.56
Laparoscopy	43	55.12
Laparotomy	7	8.97
Caseating granuloma	66	84.61
AFB	5	6.41
Culture for M. tuberculosis	8	10.25
HIV serology	2	2.56

DISCUSSION

Abdominal tuberculosis is known to human race since the times of Hippocrates ⁽¹⁾. It is a common killer disease in underdeveloped countries and is being seen with increasing frequency in the western world ⁽²⁾ .

There is a high incidence of intestinal tuberculosis in communities living in low socio-economic conditions ⁽³⁾ . Majority of our patients belonged to poor labour class and were immigrants of Asian-African origin.

The pattern of abdominal tuberculosis is changing. Peritoneal tuberculosis and colonic involvement with obstruction is seen more often ^(4,5) . Ileo-cecal region used to

be a favorite site for tuberculosis in the past but now is seen with much less frequency. In our study peritoneum was the commonest site involved in abdominal tuberculosis. All nine patients with hepatic tuberculosis presented with pyrexia, weight loss, hepatomegaly, and deranged liver function tests. Serum alkaline phosphatase was distinctively elevated (4-5 times normal) with minimal disturbance of serum bilirubin and transaminases. Four patients with hepatic tuberculosis had associated chest x-ray abnormalities suggestive of active and/or old tuberculosis.

Isolated pancreatic tuberculosis has been reported in medical literature ^(6,7,8). Our patient with pancreatic tuberculosis presented with obstructive jaundice and a mass

in the head of pancreas. Computerized tomography-guided percutaneous biopsy established the diagnosis (9).

The peritoneum is a common site of tuberculous involvement and presents as an exudative ascites. Abdominal ultrasound was helpful in confirming the presence of sub-clinical ascites.

Measurement of ascitic fluid adenosine deaminase (ADA) activity is a simple and rapid method of making presumptive diagnosis. It has a specificity and sensitivity above 95% (10,11). None of our patients had an estimation of the ADA. Laparoscopy with biopsy is an excellent diagnostic tool. The laparoscopic appearance is highly characteristic and can be classified into three types: thickened peritoneum and military yellowish white tubercles with or without adhesions, thickened peritoneum with or without adhesions and fibro-adhesive pattern (12). The diagnosis of peritoneal tuberculosis was established in 43 patients with laparoscopy demonstrating multiple, whitish nodules (<5 mm) scattered all over the peritoneum (12,13). There were no procedure associated complications.

Contrast barium studies are helpful in making the diagnosis of abdominal T.B. Suggestive radiological features include ulcerations, mucosal folds thickening, nodularity, strictures and fistulae (14).

Colonoscopy with biopsy is very valuable for the definitive diagnosis of ileal and caecal tuberculosis. Circumferential mucosal ulcers, cobble-stoning, pseudopolyps, strictures and aphthous ulcers are all recognized endoscopic features (15). All radiological and colonoscopic features described for abdominal T.B. are non-specific, and could be found in inflammatory bowel disease, infections and malignancies. Bacteriological and histological assessment of biopsied tissue is essential to differentiate tuberculosis from other pathologies.

Significant number of patients with abdominal tuberculosis require surgical intervention (16). The indications for surgery include intestinal obstruction, perforation, bleeding, and fistulae. In our study, 7 patients (8.97%) had various types of surgical procedures. Five patients had resection-anastomosis and/or By-pass for intestinal obstruction. One patient had laparotomy for acute abdomen due to tuberculous appendicitis. One patient presented with rectal bleeding from perianal fistula and required fistulectomy.

HIV epidemic has given a new dimension to the worldwide tuberculous crisis. In one series of 254 patients with HIV, 19 patients had associated abdominal T.B. (17). It is mandatory to check HIV serology in all patients with abdominal tuberculosis. In our study two African patients were positive for HIV serology. This is very important not

only as an underlying factor but also is important for extending the duration of anti-T.B. chemotherapy to 9 months.

Conventional anti-TB drugs (Isoniazid, Rifampicin, Ethambutol, Pyrazinamide) are highly effective in the management of abdominal tuberculosis (18). All our patients received this combination chemotherapy for six months except for the two HIV patients in whom the treatment was extended for extra three months. Various regimens used for pulmonary tuberculosis are as well recommended for abdominal tuberculosis (19). In our series the outcome of anti-TB treatment was successful. The patients with hepatic tuberculosis tolerated the drugs well except one severely malnourished patient who died of liver failure.

In conclusion, abdominal T.B. has protein manifestations and non-specific presentations. It requires a high index of suspicion especially in high prevalence areas and in immunocompromised patients. Anti-tuberculous chemotherapy for six months is highly effective and surgical intervention is only required when complications supervene. Ascitic ADA and Laparoscopy should be considered in suspected cases.

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