

ORIGINAL

Abdominal Tuberculosis

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ABSTRACT

This is a report of 19 patients with abdominal tuberculosis. Nine patients presented with intestinal obstruction due to ileo caecal involvement, 3 had widespread disease with ascites, 2 presented with features similar to appendicular mass, 2 had ileal and extensive colonic involvement with ascites, 2 had colonic stenosis after completely healed lesions, and one patient presented with generalised peritonitis as a result of perforation from an ileocaecal lesion.

Seventeen patients had laparotomies (15 resections and 2 biopsies), and the condition in the other 2 cases was controlled medically. There were no deaths or complications and post-operative anti-tuberculous treatment continued for one year.

Ulcerative Colitis and Crohn's disease are rare in this part of the world. When encountered, the disease is usually mild or moderate and therefore can be controlled medically in the majority of patients. In a mixed community like ours, other bowel granulomatous lesions must be differentiated. This report is a review of our experience in the management of 19 patients with abdominal tuberculosis who presented with surgical problems.

METHODS

During an 8-year period from June 1978 to June 1986, 19 patients with abdominal tuberculosis who

presented with surgical problems were managed and studied. They were 12 males and 7 females with an age range between 13 to 55 years, and a mean age of 32 years. The majority of patients were Indians, Pakistanis and Beduins. One patient was Iraqi and another one was Iranian.

All patients have had chest and abdominal X-rays, haemogram with E.S.R., blood biochemistry and 9 cases had a Mantoux test. Barium studies were carried out in four patients who had no intestinal obstruction or perforation, abdominal CT scan performed in another 2 cases, and colonoscopy was carried out in one more patient. The stool and ascitic fluid were examined for Acid Fast Bacilli, direct and culture in 5 patients.

TABLE 1
Clinical Presentation

Group 1 : Intestinal Obstruction	9
Group 2 : Abdominal Masses with Ascites	3
Group 3 : Right Iliac Fossa Mass	2
Group 4 : Peritonism with Ascites	2
Group 5 : Constipation & Abdominal Pain	2
Group 6 : Generalised Peritonitis	1
Total	19

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Group 1 :

Intestinal Obstruction (9 patients) : Abdominal pain was present for 3–6 weeks before partial or complete small bowel obstruction developed. Loss of weight, temperature reaching up to 39°C at night and lower abdominal masses were present in all cases. Evident peristalsis was clearly seen in some patients. One case had an associated pulmonary tuberculosis and another one had previous pulmonary tuberculosis. Both patients were receiving anti-tuberculous treatment in a sanatorium for over one month before being referred to us.

Group 2 :

Multiple Masses with Ascites (3 patients) : The masses were felt all over the abdomen, more evident in the upper part. Ascites and fever were present and there was no significant change in bowel habits. All 3 patients have had their stool and ascitic fluid examined for Acid Fast Bacilli.

Group 3 :

Right Iliac Fossa Mass (2 patients) : These patients presented with one-week history of abdominal pain and fever. Right iliac fossa tender mass was felt and so the diagnosis of appendicular mass was made. However, the possibility of tuberculosis was raised when the mass did not resolve with antibiotics.

Group 4 :

Peritonism with Ascites (2 patients) : These patients were ill with high fever, ascites, abdominal masses and generalised tenderness with passage of loose stools. One patient had in addition pulmonary tuberculosis. Both patients had their stools and ascitic fluids examined for Acid Fast Bacilli.

Group 5 :

Increasing Constipation and Abdominal Pain (2 patients) : These 2 cases had previously received anti-tuberculous treatment for over one year; for cervical tuberculous adenitis in one patient and for pulmonary tuberculosis in the other case. Both patients also had intestinal lesions at that time, which were assumed to be tuberculous. Eventually all lesions were controlled quite well. Approximately one year later, both patients found themselves in need of laxatives and enemas in order to regularly open their bowels.

Group 6 :

Generalised Peritonitis (1 patient) : This patient presented with generalised abdominal pain, tender-

ness, fever, dehydration and electrolytic disturbances. The diagnosis of perforated appendix or viscus was provisionally made.

RESULTS

Except the 2 cases who had healed lesions and presented with constipation, all other patients had a raised E.S.R., mild leukocytosis and anaemia. Mantoux test was strongly positive at 1 : 10,000 dilution in all 9 cases in whom the test was done. No AFB were cultured from the stools or the ascitic fluids of the 5 patients examined. One patient had definite diagnosis through colonoscopic biopsy, 5 other cases were assumed to have the intestinal disease because of an associated pulmonary tuberculosis, previous pulmonary tuberculosis, or previous cervical adenitis in 2, 2, and 1 patients respectively.

GROUPS OF PATIENTS

Group 1 (9 patients) :

Multiple fluid-air levels were present in all abdominal films. Two patients had a dense shadow in the apex of the left lung which was considered as tuberculous in one case, and healed lesion in the other. All patient had a laparotomy. The obstructive lesion is of the hyperplastic type in the ileocaecal region. In one patient an ileal loop was also affected. The bowel wall is thickened and the mucosa looks unhealthy granular, polypoid or ulcerated (Fig. 1 and 2). Mesenteric lymph nodes are enlarged. All lesions were resected and immediate end to end anastomosis carried out. Due to the benign condition, only limited resection was undertaken.

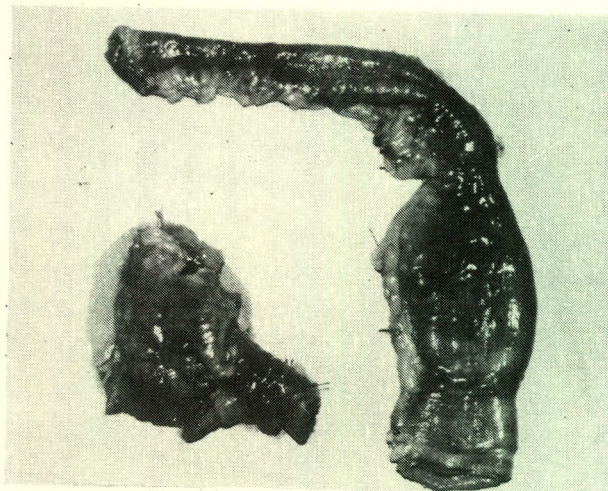


Fig 1 : Resected specimen of ileocaecal hyperplastic tuberculosis and ileal loop with stenotic lesions.



Fig 2 : *Opened specimen ileocaecal lesion in Fig 1, showing the polypoidal and ulcerative features.*



Fig 3 : *Barium meal and follow through of a patient with ascites, showing various small bowel loops with narrowing and dilatation.*

Group 2 (3 patients) :

The differential diagnosis in these patients was between Tuberculosis, Lymphoma or Carcinomatosis peritonei. One patient had a barium study and abdominal CT scan. In the barium meal follow through, many abnormal bowel loops were seen (Fig. 3). In the CT scan, matted bowel loops centrally and posteriorly, ascites and irregular parietal peritoneum anteriorly were seen (Fig. 4). All 3 patients had a laparotomy and widespread disease with tubercles all over the parietal peritoneum and the matted bowel loops were found. Only biopsies from peritoneal tubercles and enlarged mesenteric lymph nodes were taken.

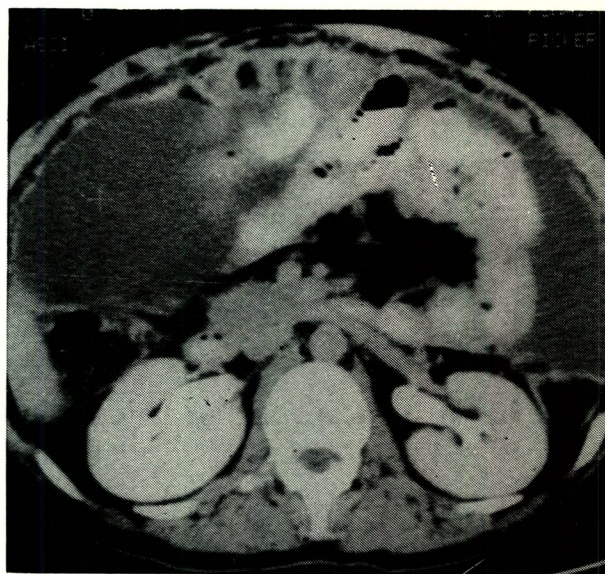


Fig 4 : *CT scan showing, ascites, matted bowel loops in the middle and posterior part of the abdominal cavity, with irregular parietal peritoneum anteriorly due to the tubercles.*

Group 3 (2 patients) :

No intestinal obstruction was present. Both patients had a laparotomy with resection of an ileocaecal lesion and immediate anastomosis. The lesions were similar to those described in group 1.

Group 4 (2 patients) :

Due to the clinical features and the abdominal findings in these 2 patients, a laparotomy was indicated. However due to their poor general condition, an intensive medical treatment with I.V. nutrition and correction of fluids, electrolytes and anaemia was started. Because of the high suspicion

of tuberculosis a blind trial with anti-tuberculous treatment was given. When the condition started to improve with gradual disappearance of the fever and ascites, a barium studies in both patients and a CT scan in one of them were carried out. In the barium studies, severe involvement of the right colon with ulceration and narrowing were seen (Fig. 5). The CT scan showed the same findings previously described. One of the patients also had a colonoscopy. This revealed the presence of multiple ulcerations throughout the colon, with severe involvement of the right side. Biopsies from the lesions confirmed the diagnosis of tuberculosis.



Fig 5 : *Barium enema, showing severe ulcerations and narrowing of the right colon due to active disease.*

Group 5 (2 patients) :

Barium enema studies (Fig. 6) showed a shortened right colon, pulled up caecum and stenosis in the beginning of the transverse colon. Laparotomy and local excision with immediate anastomosis was done.



Fig 6 : *Barium enema, showing a healed lesion, with shortened right colon, pulled up caecum, and stenosis at beginning of transverse colon.*

Group 6 (1 patient) :

Laparotomy was carried out. The peritoneal cavity contained purulent fluid and a perforation in the terminal ileum with an acute inflammation of an ileocaecal lesion was found. Resection of the lesion and immediate anastomosis with peritoneal toilet was done.

TABLE 2

Pathological Types

Hyperplastic (Hypertrophic)	10
Ulcerative	4
Stenotic	2
Hyperplastic & Ulcerative	2
Hyperplastic & Stenotic	1
Total	19

Table 2 shows the pathological types of the disease. All patients had mesenteric lymph nodes

involvement, and 3 cases of the ulcerative type had also widespread tubercles in the peritoneum. All resected specimens were examined and various grades of epithelioid granulomatous lesions with Langhan's giant cells and caseation surrounded by a cuff of lymphocytes were found (Fig. 7 and 8). Ziehl-Neelson stain was positive in 3 patients out of the ten cases in whom the stain was performed.

There was no mortality and no significant post-operative complications developed. Fever continued post-operatively for 1-2 weeks in those patients who had resection of the intestinal lesions. One of the 2 patients who had no laparotomy developed a pleural effusion a few months after controlling her abdominal disease. This needed repeated aspirations.

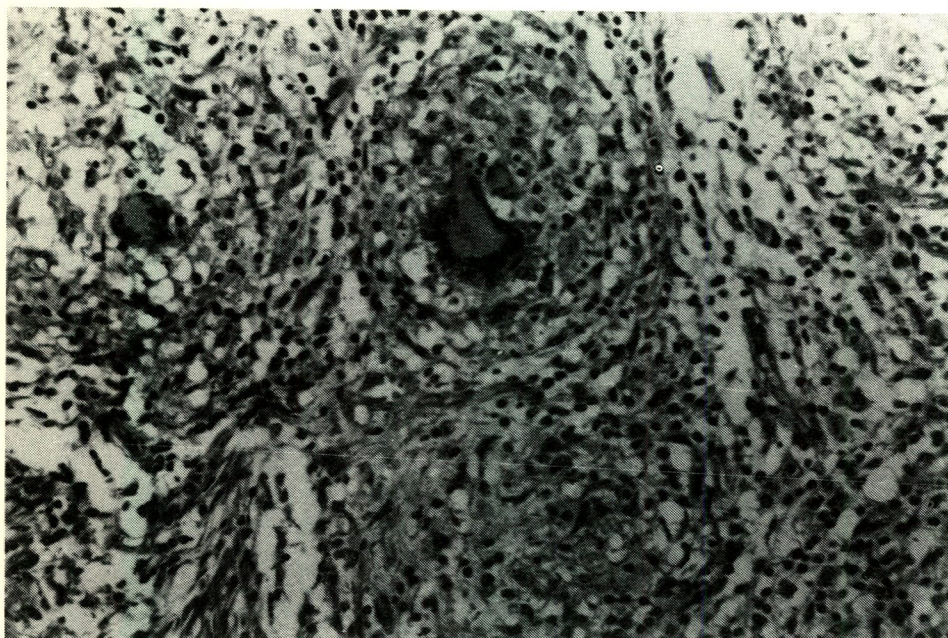


Fig 7 :
Microscopical view.
H & E X 240, showing a
caseating granuloma.

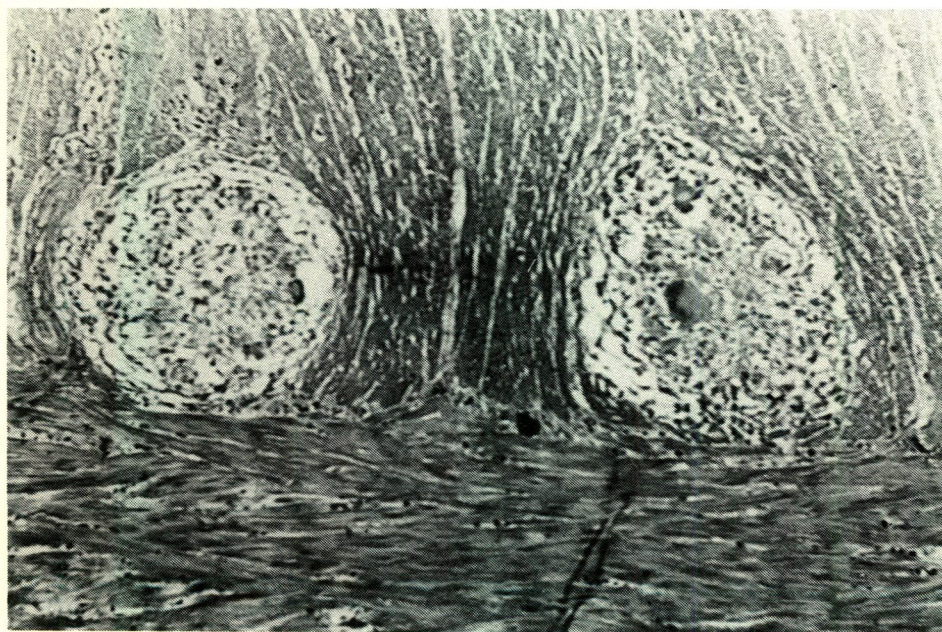


Fig 8 :
Microscopical view.
H & E X 240, showing
granuloma in
intestinal muscle.

Anti-tuberculous treatment (INH, Ethambutol, and Rifampicin) continued for over one year, and follow up was from 1 to 2 years after completing their medical treatment. No patient had recurrence of the disease or further problems.

DISCUSSION

Intestinal tuberculosis may be primary, or secondary to pulmonary tuberculosis. The type and way of infection depends on the prevalence of the human or the bovine tubercle bacillus, and the standard of living of these patients. While drinking unpasteurised cow's milk is regarded as the most important way of transmitting the bovine type in many developing countries^{1,2,3,4}, other reporters noted a high association of pulmonary tuberculosis^{5,6}. Five patients (26.3%) in our series had either an associated or previous pulmonary tuberculosis, or previous cervical tuberculous adenitis. With the absence of previous history of pulmonary tuberculosis among the other patients, it is assumed that probably they had the primary intestinal tuberculosis which they had been affected with before coming to work in Kuwait. This is especially so for the Indian and Pakistani labourers.

The clinical features in our series conform to those already reported by others^{1,2,5}, and they correlate well with the activity of the disease and the pathological type of the lesion^{1,2}. In the acute ulcerative phase, it may present as enteritis, bleeding from the gut or perforation, while in the chronic hyperplastic or fibrotic phase it may present as a subacute or acute intestinal obstruction. None of our patients presented with bleeding, while perforation which is regarded as an uncommon complication was encountered in one of our cases (5.3%). Nowokolo⁷, found abdominal tuberculosis with ascites accounts for 24% of all adult African patients presenting with ascites. Five (26.3%) of our patients had ascites. It was suggested that this may arise from activation of a long latent tuberculous focus in the peritoneum⁸, or as a complication of intestinal tuberculosis⁹. All our patients who had ascites have had widespread bowel, lymph nodes and peritoneal diseases.

Most reports recognize 4 pathological types of tuberculosis lesions^{1,2,5}. These are the hyperplastic (hypertrophic), ulcerative, sclerotic or fibrous, and the combined, usually hyperplastic and ulcerative.

Although it was reported that occasionally, the hypertrophic type of lesion has been encountered in the ascending colon, transverse colon and other parts of the colon¹, in the strictest sense, this variety of tuberculosis should be confined to the ileocaecal region¹⁰. It entails considerable hypertrophy of the submucous and subserous layers of the gut wall, and caseous necrosis is conspicuously absent. The rest of the bowel is normal. This type is recognised as one of the most common types of tuberculosis in the tropics^{1,11,12}. Excluding the 2 patients with healed-strictured lesions, 12 (63.2%) cases in our series had the hyperplastic ileocaecal type.

The radiographic appearances are in the main those of narrowing and fibrosis causing the caecal region to be drawn up towards the right hypochondrium. The appearance of transverse fissuring or ulcers might be mixed up with Crohn's disease. Tuberculous colitis may closely mimic carcinoma of the colon⁵. However, association with long areas of narrowing and fibrosis or transverse fissures should make tuberculosis the more likely diagnosis.

In highly suspicious and high risk patients without acute complications, colonoscopy and biopsy can help in making the diagnosis¹³. One of our patients with extensive colonic ulcerations was diagnosed by this means.

CT scan was done in 2 of our patients. The usual findings consist of ascites, matted bowel loops and the appearance of irregular parietal peritoneum due to the presence of the tubercles. This investigation may prove useful in excluding other diseases, particularly those with hepatic and splenic lesions.

Abdominal tuberculosis must be differentiated from appendicular mass, amoeboma, carcinoma, schistosoma mansoni infestation of the lower bowel, lymphoma of the intestine, and Crohn's disease. The latter is rare in this part of the world; we only encountered 4 cases during the same period of this study. The differentiation between the two diseases is sometimes extremely difficult on clinical and radiological manifestations. Careful histological review, presence of pulmonary tuberculosis and the demonstration of Acid Fast Bacilli are the clues for confident diagnosis.

The main line of treatment in abdominal tuberculosis is medical. All our patients took Rifampicin

with INH with or without Ethambutol. For some patients, however, operation is inevitable, and it has both a diagnostic and therapeutic role. Unless there is a suspicion of malignancy and due to the benign behaviour of the disease, a limited resection is usually recommended. The standard hemicolectomy usually done for cancer is therefore not necessary. Occasionally, a therapeutic trial with anti-tuberculous drugs has a place when no definitive diagnosis has been made and suspicion is strong¹⁴. This was the case in 2 patients of ours with favourable results.

CONCLUSION

Patient with abdominal tuberculosis could present with intestinal obstruction, ascitis, appendicular mass and generalized peritonitis.

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