Ileo-caecal tuberculosis in immigrants

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Summary

Four cases of ileo-caecal tuberculosis in Asian immigrants were seen in a 6-month period at The London Hospital. Although rare in Caucasians, this condition is an important cause of gastrointestinal symptoms in this ethnic group. Definitive diagnosis can frequently be made only by histological examination and culture of biopsy material obtained at laparotomy. However, in suitable cases, where there is a high index of clinical suspicion, a trial of chemotherapy may be preferable to operation. If laparotomy is performed, resection with subsequent chemotherapy is the treatment of choice.

Introduction

A steady fall in tuberculosis mortality has been recorded in the United Kingdom since the end of the last century, probably owing to improvements in housing, nutrition and standards of living. Since the advent of chemotherapy mortality has declined more rapidly and from 1945-1969 notification rates decreased steadily by 9-10% per year. Since 1969 this fall in tuberculosis notification rates has decreased and there is evidence that this may be due to immigration. There is a much higher incidence of tuberculosis found in immigrants from Bangladesh (54-fold) and Pakistan (27-fold) (British Thoracic and Tuberculosis Association, 1973), and these groups are three times more likely to have non-respiratory forms of tuberculosis (British Tuberculosis Association, 1966) when compared to English and Welsh people. Gastrointestinal tuberculosis is unusual in the United Kingdom but common in some parts of the world. In India up to 5% of unselected post-mortem cases have shown gastrointestinal tuberculosis (Ukil, 1942), while at University College Hospital, Ibadan, 2.5% of all medical admissions between 1963 and 1969 were for this condition (Lewis and Kolawole, 1972). The commonest site for tuberculous involvement of the gastro-

intestinal tract is the ileo-caecal region (Kornblum-Zale and Aronson, 1948).

In the Tower Hamlets area, there were 138 notified cases of tuberculosis in the year ending 1975; 50% of these occurred in immigrants. In this paper the authors describe four immigrant patients who presented with ileo-caecal tuberculosis at The London Hospital during a 6-month period in 1975.

Case histories

(1) A 20-year-old male Ugandan Asian, resident in the United Kingdom for 3 years, presented with a 4-month history of right iliac fossa pain, anorexia and weight loss of 11.1 kg. He had fever and night sweats for 1 week before admission but no cough, haemoptysis or bowel upset. On examination he was frail, wasted and pyrexial. There was lower abdominal tenderness but no masses were palpable. Investigations showed a haemoglobin of 11.6 g/dl, a normal white count and an erythrocyte sedimentation rate of 66 mm/hr. The alkaline phosphatase was 150 i.u./l, the albumin 32 g/l and the globulin 44 g/l. A Mantoux test was weakly positive 1/10 000. Chest X-ray and mediastinal tomography showed glandular enlargement of the right paratracheal region; a barium meal and follow through showed an abnormal ileo-caecal region.

A diagnosis of ileo-caecal and pulmonary tuberculosis was made and he was given a trial of ethambutol and isoniazid. His fever rapidly improved. Subsequently acid-fast bacilli were seen and grown from the stool and gastric washings and rifampicin was added to his therapy. His symptoms rapidly resolved, and at follow-up, 24 months later, he was completely well.

(2) A 17-year-old Indian girl, resident in the United Kingdom for one year, presented initially with an 18 month history of abdominal pain, weight loss and anorexia. A diagnosis of appendicitis was made but this was changed to Crohn's disease, when at laparotomy a caecal mass was found. She was

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treated with salazopyrin but abdominal pain continued and was associated with vomiting and weight loss. When seen at The London Hospital she was wasted, pyrexial and a right iliac fossa mass was palpable. The haemoglobin was 9 g/dl, with microcytosis, the white blood count $12.3 \times 10^9/l$ with a neutrophil leucocytosis and liver function tests and a chest X-ray were normal; a Mantoux test was positive at a dilution of 1/10 000 and a straight X-ray of the abdomen showed some calcified mesenteric lymph nodes. A further laparotomy was undertaken, because of intestinal obstruction, when an inflammatory mass in the caecum was found with enlarged mesenteric nodes and a distended small bowel. A bypass operation and a lymph node biopsy were performed, the latter showing the typical appearances of tuberculosis with caseation, although no acid-fast bacilli could be identified.

Postoperatively she remained febrile until rifampicin, isoniazid and ethambutol were started. Her condition improved and at follow-up 18 months later, she was free of pain and had gained weight.

(3) A 35-year-old female from Bangladesh had been resident in the United Kingdom from 1972, although she had returned to Bangladesh for a holiday in 1974. She had a 5-year history of abdominal pain; irregular bowel habit and generalized weakness. Six weeks before admission to The London Hospital, she had been delivered of a full term infant of 2.72 kg. During pregnancy she had had a microcytic anaemia with a haemoglobin of 10 g/dl, but electrophoresis was normal. The serum iron was low, the serum iron binding capacity was increased and the stools were positive for occult blood. Following delivery there had been symptomatic deterioration associated with abdominal distension and vomiting. On examination she was apyrexial, but pale and wasted. She was tender in the right iliac fossa but no mass was felt. On investigation a normal chest X-ray was found but the alkaline phosphatase was raised and the Mantoux test was positive 1/10 000. Barium studies showed an abnormal ileo-caecal region. Examination of sputum, gastric washings, faeces and urine failed to show acid-fast bacilli and Lowenstein-Jenson cultures were subsequently negative. Liver biopsy appearances were typical of tuberculosis with diffuse granulomata and destruction of the reticular pattern but without caseation. The diagnosis was considered to be ileo-caecal and hepatic tuberculosis and therapy was started with rifampicin, isoniazid and ethambutol. Since then she has had no further abdominal pain and has gained weight. At follow-up 12 months later she was asymptomatic with a normal haemoglobin.

(4) A 40-year-old male from Bangladesh presented to The London Hospital with recurrent attacks of

small bowel obstruction over a 6-month period. Investigations had shown a normal chest X-ray and haemoglobin; a positive Mantoux test and an abnormal terminal ileum on barium follow-through. He had refused laparotomy on two occasions. On this third occasion he again presented with sub-acute obstruction and at laparotomy, dense peritonitis with adherent loops of small bowel and multiple serosal omental nodules were seen. There was no free fluid. A peritoneal biopsy showed granulomata with caseation but guinea-pig cultures for acid-fast bacilli were negative. The diagnosis was considered to be ileo-caecal and peritoneal tuberculosis and he was treated with rifampicin and isoniazid. At follow-up 12 months later, he was asymptomatic.

Discussion

The diagnosis and treatment of ileo-caecal tuberculosis is frequently delayed since there are no specific symptoms and signs or radiological features (Marshak and Lindner, 1970). A negative Mantoux test almost certainly excludes the diagnosis (Singh, Vaidya and Roy, 1973b) but was positive in all the present cases. Patients with intestinal disease secondary to pulmonary tuberculosis seldom present difficulty in diagnosis but primary ileo-caecal tuberculosis is now a well established entity (Anand, 1956) and there was no evidence of pulmonary disease in three of the four cases.

The diagnosis can present considerable difficulty and depends on a high index of suspicion in patients with ileo-caecal lesions, particularly if such patients are racially predisposed to the disease. Pathogenic mycobacteria can only rarely be recovered from the stools (Hoon, Dockerty and Pemberton, 1950) but when this test is positive and pulmonary or laryngeal lesions are absent, it can be taken as proof of intestinal involvement (Dubos, 1952). In the majority of patients in whom pathogenic mycobacteria cannot be recovered from the stools, the diagnosis requires the histological demonstration of tuberculous lesions or growth of mycobacteria from the gastrointestinal tract (Hoon *et al.*, 1950). The finding of granulomata in biopsy specimens is not diagnostic and has been a source of controversy in the differential diagnosis of Crohn's disease (Crohn, Ginzburg and Oppenheimer, 1932). Caseation is considered diagnostic of tuberculosis, the lymph glands showing this feature more frequently (90%) than the resected bowel (28%) (Singh *et al.*, 1973b). Mycobacteria are difficult to demonstrate in resected specimens. Thus in Hoon *et al.*'s series (1950) of fifty-eight patients with caseous tuberculosis, acid-fast bacilli could be demonstrated in only nineteen and in Singh *et al.*'s (1973b) series of fifty cases, acid-fast bacilli were grown in only seven,

although guinea-pig inoculation was positive in twenty-nine of thirty-eight cases. Liver biopsy is seldom helpful, caseating granulomata being seen in only one patient out of thirty with proved gastrointestinal tuberculosis (Gambhir, Goyal and Rawat, 1972). Peritoneal aspiration or biopsy is helpful, however, in patients with ascites (Singh, Bhargava and Jain, 1969).

Laparotomy may be required for relief of intestinal obstruction but is often performed specifically to achieve a diagnosis (Lewis and Abioye, 1975). This procedure may be avoided if there is a strong clinical suspicion of ileo-caecal tuberculosis and the findings of fever, a mass and an ileo-caecal abnormality on barium follow-through, together with a strongly positive Mantoux test in an Asian immigrant, strongly suggest tuberculosis and in such patients a trial of chemotherapy is indicated.

It has been suggested that medical treatment alone leads to increased fibrosis (Bondurat and Reid, 1975) since sixteen out of seventeen patients having bypass procedures combined with chemotherapy required right hemicolectomy later because of fibrotic residuals (Wig *et al.*, 1961). However, Mason *et al.* (1949) showed that of seventeen patients, with secondary ileo-caecal tuberculosis who had barium studies before and after medical treatment, eight were improved and six were entirely normal. In Chuttani's (1970) series of 166 patients, more than 50% of the patients responded to chemotherapy alone, operative intervention becoming necessary in the remainder, mainly for relief of obstruction. There is some evidence that steroids combined with chemotherapy may reduce the incidence of this complication (Singh *et al.*, 1969).

Although bypass surgery was frequently advocated in the past (Davis, 1933) most workers have concluded that right hemicolectomy, combined with chemotherapy, is superior (Hoon *et al.*, 1950; Anand, 1956; Singh, Roy and Vaidya, 1973). It provides more diagnostic material, removes the possibility of late obstruction, while unexpected lesions such as neoplasms are less easily missed. Of sixty-one patients treated with local resection and chemotherapy by Singh *et al.* (1973a), forty-four were available for follow-up 2 years later, and only one required further operation; this patient had taken drugs for only 2 months.

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