ORIGINAL ARTICLE

Protean Manifestations of Gastrointestinal Tuberculosis

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Summary

We present 11 cases to illustrate the protean presentations of gastrointestinal tuberculosis. The patients presented with perianal fistula, appendicitis, ascites, rectal, intestinal or gastric 'growth', "ulcerative colitis", or recurrent anemia. In some of these cases there was no conclusive proof of infection with Mycobacterium tuberculosis but they responded well to empirical treatment with anti-tuberculous therapy. These cases illustrate that because signs and symptoms of intestinal tuberculosis are non-specific and even histology can be misleading, the diagnosis of gastrointestinal tuberculosis requires a high index of suspicion. A therapeutic trial of antituberculous drugs should be considered for patients with a high clinical suspicion of tuberculosis.

Key Words: Tuberculosis, Gastrointestinal, Extra-pulmonary

Introduction

The abdomen is a common site of extrapulmonary tuberculosis. It has a wide spectrum of non-specific symptoms and signs. From January 1998 to December 2001, 193 cases of pulmonary tuberculosis (PTB) and 30 cases of confirmed extrapulmonary tuberculosis were diagnosed in Kedah Medical Centre. The patients presented with appendicitis (3 cases), perianal fistula (2 cases) and one case each with ascites, and abdominal mass. In addition, a number of cases of highly probable but unconfirmed cases (pulmonary and extrapulmonary) were also recorded. We present 11 cases (confirmed and suggestive) of intestinal tuberculosis to highlight their protean manifestations.

Case Presentations

1: Perianal Fistula

Case 1: A 70-year old man had perianal abscess of three-week duration and developed fistula-in-ano after drainage. Histopathology of the fistula tract showed active on chronic granulomatous inflammation with Langhans giant cells consistent with tuberculosis. Special stain for acid-fast bacilli (AFB) was negative. Preoperative chest x-ray showed infiltrates in the right upper lobes suggestive of PTB. On questioning, he admitted to have had 'chest infection' about 40 years ago and since then had a chronic cough. Sputum direct-smear was positive for AFB.

Case 2: A 21-year-old male student had recurrent perianal sinus. He first presented in June 1992 with

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perianal abscess. Since then he had undergone three fistulectomies. Histopathology showed chronic inflammatory granulation with microabscess. There was no evidence of Crohn's disease or tuberculosis. He did not respond to antibiotics (including metronidazole). He also had episodes of cough with chest pain but investigations for tuberculosis including chest x-rays, Mantoux test, ESR, and sputum for AFB and TB culture were negative. In September 1994, three sputum specimen and the anal discharge were all positive for *Mycobacterium tuberculosis* by polymerase chain reaction (PCR) method. The perianal fistula and chest symptoms improved after treatment with anti-TB.

2: Appendicitis

Case 3: A 25-year-old male lorry driver presented with a chronic discharging sinus from the wound of an appendicectomy done in another hospital eleven months earlier. His grandmother had pulmonary tuberculosis and his father had undiagnosed haemoptysis. The chest x-ray was normal. Histopathology of the fistula tract showed tuberculous granuloma. Pus direct smear was negative for AFB but TB culture grew *Mycobacterium tuberculosis.*

Case 4: A 29-year man had an appendicectomy done in another hospital. Hisotopathology of the appendix showed granuloma and the wound was non-healing. Chest x-ray was then done which showed bilateral upper lobe infiltrations suggestive of PTB. Bronchial washing direct-smear was positive for AFB. The wound healed after anti-TB treatment

3: Ascites

Case 5: A 48-year-old lady was admitted with ascites and weight loss. Laparoscopy found nodular lesions on the surface of the bowel, omentum and peritoneum. Histology showed necrotising chronic granulomatous inflammatory lesions suggestive of tuberculosis. AFB stain was negative. Patient responded well to anti-tuberculous therapy.

4: "Ulcerative Colitis"

Case 6: A 34-year-old lady presented to another hospital in June 1999 with a history of diarrhea with blood and mucus for about one year. It was associated with weight loss of about 10kg. Hemoglobin was 9.0 g/dl, TWBC: 10.0 $x10^9$/L and Platelets: 550 $x10^9$/L. Colonoscopy revealed pancolitis and the histology was suggestive of ulcerative colitis. She was treated with suphasalazine 1000 mg QID and metronidazole. After four months, she still had diarrhea and lost a further 10kg in weight. Prednisolone was added without effect and she was planned for surgery.

She then presented to our hospital in March 2000. She still had chronic diarrhea with mucus and blood. She also complained of bilateral symmetrical joint pain of two weeks duration. On examination, she was thin (weight 43kg). There was a vague mass in the left iliac fossa. Both ankles were swollen and tender. Hemoglobin: 8.3 g/dl; TWBC: 8.5 $x10^9$/L; Platelets: 548 $x10^9$/L; Erythrocyte sedimentation rate (ESR): 65 mm/hr. Barium enema showed a dilated colon with loss of haustrations suggestive of ulcerative colitis. She refused colonoscopy. Treatment was continued with metronidazole, prednisolone and sulphasalazine.

One month later (April 2000) she was admitted severely unwell with severe diarrhea and skin lesions typical of erythema nodosum were noted over both legs. Hb: 9.5 g/dl; TWBC: 8.6 $x10^9$/L; Platelets: 574 $x10^9$/L; ESR: 92 mm/hr. She was initially treated with intravenous hydrocortisone, metronidazole, cefuroxime and anti-diarrhoeal but she did not improve. On the third day, empirical anti-TB therapy was started and the antibiotics stopped. She responded very well. After one week, the diarrhea stopped and erythema nodosum disappeared. Five months after treatment (September 2000), her weight rose to 47 kg and the haemoglobin: 10.3 g/dl; TWBC: 7.5 $x10^9$/L; Platelets: 499 $x10^9$/L ESR: 30 mm/hr. She refused barium studies. She remained well and delivered a pair of healthy twins in November 2001.

Case 7: A 57-year old man presented with multiple perianal sinuses associated with anorexia and weight loss. He was diabetic and had a history of recurrent admissions for breathlessness and pyrexia of unknown origin for the past six years. He was treated with bronchodilators, steroids, and antibiotics. Chest x-ray showed cardiomegaly with consolidation and a mild effusion in the right lower zone. Colonoscopy showed oedematous, thickening of rectal mucosa and contact bleeding from anus up to 35cm, suggestive of ulcerative colitis. Hisotopathology showed non-specific colitis and proctitis. The chest and bowel symptoms improved after anti-TB treatment.

5: Recurrent abdominal pain with intestinal 'growth'

Case 8: A 15-year old student was seen in June 1999 with recurrent abdominal pain for 5 years. In 1996, he was admitted to a hospital and told to have 'gastric'. The pain was usually in the epigastrium but often radiated to the whole abdomen. The patient often missed school because the pain occurred a few times a month and lasted 1-2 days. There was associated fever, anorexia and weight loss. On examination, the patient was thin (weight: 33kg). There was a 'doughy feeling' on palpation of the abdomen. Barium meal follow through showed a segment of dilatation in the lower small intestine suggestive of growth or TB. The patient refused further investigations. He was put on empirical anti-TB and responded well. After two weeks there was no more abdominal pain and his weight rose to 37kg after two months.

Case 9: A 17-year-old male student presented with epigastric pain of seven years duration. He had an oesophagogastroduodenoscopy done in general hospital seven years ago and told to be normal. He also had anorexia and weight loss but no fever or cough. On examination, the patient was pale and thin (weight: 48kg). There was a 'doughy feeling' on palpation of the abdomen. Rectal examination revealed a mass at the tip of the finger, not seen on proctoscopy. On questioning, he admitted to have recurrent blood and mucus in the stools. Barium enema showed irregularity of the lower rectum compatible with carcinoma or granuloma. The patient refused colonoscopy. Hb: 7.0 g/dl; TWBC: 4.7 x10^9/L; Platelets: 462 x10^9/L ESR: 13 mm/hr. He was put on empirical anti-TB treatment and responded well. After two months he had no further complaint, the mass disappeared and weight rose to 53kg.

6: Recurrent anemia

Case 10: A 19-year-old female student was first diagnosed to have iron-deficiency anemia in March 1995 (Hb: 7.2 g/dl; TWBC: 7.9 x10^9/L; Platelets: 565 x10^9/L, Low serum iron, normal serum B12 and folate). She improved with hematinics. In June 1996, she presented with recurrent anemia (Hb: 7.5g/dl TWBC: 6.0 x10^9/L Platelets: 683 x10^9/L ESR: 20 mm/hr). On questioning, she had a history of recurrent blood and mucus in stools. Rectal examination revealed a mass. Colonoscopy revealed an ulcerative growth at 4cm from the anal verge. Histopathology showed inflammed, benign ulcerated hyperplastic rectal polyps. She was continued on hematinics. She was referred again in August 2000 with similar problems. There was a 'doughy feeling' on abdominal palpation and rectal examination showed similar findings. Barium enema showed persistent spastic narrowing of the rectum. She was put on empirical anti-TB and has been well since.

7: Gastric growth

Case 11: An 81-year-old man had 'chronic gastric ulcer' first diagnosed by gastroscopy/biopsy in 1988. In 1997 he had a total gastrectomy (Biltroth I) for a 'large gastric ulcer'. Gross specimen showed an ulcerative growth in the greater curvature encroaching the antrum and suspicious of a gastric carcinoma. Histopathology revealed active antral ulcer without malignancy. No family history was recorded and no chest x-ray was done.

In February 1999 he was admitted with left basal pneumonia. The TWBC was normal but no ESR or sputum studies were done. In August 1999 he was

referred by a general practitioner on account of chronic productive cough and prolonged fever associated with anorexia and weight loss. On questioning, his wife died of PTB and one daughter-in-law also had PTB. He was thin (weight: 43 kg). His weight was recorded to be 56 kg in May 1998. Chest x-ray showed scattered soft opacities in the right upper zone and both lower zones suggestive of PTB. Sputum direct-smear was negative for AFB. Bronchoscopy showed severe inflammation with mucoid secretions in all bronchi. Bronchial washing direct-smear was positive for AFB confirming diagnosis of PTB.

Discussion

Gastrointestinal tuberculosis is not uncommon and may affect any part of the system. The signs and symptoms are non-specific and may mimic other diagnoses. The eleven cases illustrates that gastrointestinal TB may mimic appendicitis, perianal fistula, gastric ulcers, rectal ulcers and may present as recurrent anemia.

The diagnosis of gastrointestinal tuberculosis can be challenging and sometimes only made on post-mortem[1]. The chest x-ray may show associated active pulmonary tuberculosis in fewer than 50% of cases of intestinal tuberculosis[2]. Often, the diagnosis is made by endoscopy or at laparotomy. This is not possible in many of our patients who often refuse invasive procedures due to fear or financial reason. Furthermore, even histological appearances may be very non-specific[3].

Tuberculosis anal sepsis is common but is often not recognised and neglected[4]. Not uncommonly, patients were diagnosed as Crohn's disease because of negative staining on histology, mycobacterial culture and polymerase chain reaction[5-7]. Extensive colonic tuberculosis is known to mimic ulcerative colitis[8-9]. Tuberculosis presenting as gastric ulcer or peri-rectal mass has been reported[10-11] but tuberculosis pesenting as gastric tumour is extremely rare[12].

Although ileocaecal tuberculosis is the commonest presentation of abdominal tuberculosis, isolated appendicular involvement is rare[13]. However, in areas where tuberculosis is endemic, it is mandotary to send all appendicectomy specimens for histopathology examination[14].

The recent upsurge in tuberculosis worldwide calls for an increased vigilance by physicians especially for extrapulmonary tuberculosis. Because the signs and symptoms of intestinal TB are non-specific, and the histology and microbiology are often negative, a high index of suspicion must be maintained to ensure a timely diagnosis. Most authors recommend empirical therapy if intestinal tuberculosis is suspected, despite negative histology, smear, and culture results[15-17].

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