

East African Medical Journal Vol. 85 No. 2 February 2008

DIAGNOSTIC CHALLENGES OF INTESTINAL TUBERCULOSIS IN A PATIENT WITH CHRONIC DIARRHOEA: CASE REPORT

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### SUMMARY

A case of intestinal tuberculosis affecting the jejunum (with perforations) and the colon is presented. The objective is to highlight the challenges medical practitioners face in making a timely diagnosis of intestinal tuberculosis. It also aims to raise awareness that chronic diarrhoea and weight loss are common symptoms of colonic tuberculosis. A 26 year old university student was admitted with a three month history of diarrhoea anorexia and weight loss having been seen and treated for typhoid in several hospitals without improvement. Colonoscopy and biopsy was non conclusive. He later developed subacute intestinal obstruction that did not respond to conservative treatment. Explorative laparotomy revealed jejunal perforations with localised abscesses, peritoneal adhesions with caseous nodules and mesenteric lymphadenopathy. Histology of resected specimens was positive for mycobacterium tuberculosis.

### INTRODUCTION

Intestinal tuberculosis is much more difficult to diagnose than pulmonary tuberculosis. One of the reasons is the low diagnostic yield of endoscopic biopsy specimens. Tuberculosis remains one of the most common problems affecting patients in developing countries where poor sanitary conditions, overcrowding and malnutrition are common. Intestinal tuberculosis can mimic any abdominal inflammatory disease and hence a high degree of suspicion is needed to avoid delays in diagnosis resulting in increased morbidity and mortality (1-10).

The prevalence of extra-pulmonary tuberculosis seems to be rising, particularly due to increased prevalence of acquired immuno deficiency syndrome (AIDS). The abdomen is involved in 11% of the cases (4, 5). In the abdomen, tuberculosis may affect the gastrointestinal tract, peritoneum lymph nodes and solid viscera.

### CASE REPORT

A 26 year old male fifth year University of Nairobi veterinary medicine student presented to the casualty department of North Kinangop Mission

Hospital on 25<sup>th</sup> August 2006. He gave a three month history of diarrhoea, epigastric discomfort and pain, anorexia and weight loss. He also complained of bloody diarrhoea on two occasions in the two weeks preceding the admission. The patient had been seen severally at the upper Kabete and main campus university clinics being treated for malaria, amoebiasis and typhoid without any improvement. Frustrated by lack of improvement he sought treatment at Nyeri provincial general hospital and was treated for typhoid with ciprofloxacin despite negative laboratory tests. He was single and denied contact with any person with chronic cough. He however recalled laboratory exposure to *mycobacterium bovis* and tuberculosis culture specimens while at the university microbiology laboratory a year prior to the admission. He did not have a family history of inflammatory bowel disease or bowel malignancy.

On physical examination he was wasted, dehydrated, and had no peripheral lymphadenopathy. His body temperature was 37.7°C and was pale but not jaundiced. His blood pressure was 130/70 mmhg. His abdomen was distended with visible peristaltic movements and tender on deep palpation of right and left lower quadrants. The bowel sounds were normal.

The initial test revealed hypochromic microcytic anaemia. The haemoglobin level was 9.0 g/dl. The white blood cell count was normal at  $4.8 \times 10^9/l$  with 70.3% granulocytes and 25% lymphocytes. The platelet count was  $430 \times 10^9/l$  and the erythrocyte sedimentation rate was raised at 46mm/hr. His liver function tests revealed a low albumin level of 27g/l and other parameters being normal. Renal function tests, stool microscopy and random blood sugar were normal. Elisa test for HIV was negative on two occasions.

Plain X-ray of the abdomen both erect and supine revealed multiple air fluid levels while the chest X-ray was normal. Colonoscopy revealed multiple ulcerations involving the caecum, descending and sigmoid colon. Histological examination of colonic biopsies revealed increased frequency of plasma cells, cryptitis, crypt abscesses and submucosal epithelial granulomas. No acid fast bacilli were detected. A histological diagnosis of benign ulceration and chronic colitis consistent with chronic inflammatory bowel disease was made. The patient was given a course of mesalazine 3g/day and metronidazole 400mg three times a day. No improvement was noted and instead he developed constipation which did not improve with colonic washouts and other conservative measures. His abdomen was distended with increased bowel sounds. Explorative laparotomy revealed multiple peritoneal caseous nodules with jejunal perforations and localised abscesses. 10 cm of jejunum was resected and end to end anastomosis done. Mesenteric lymph node biopsy was done. Cultures from the biopsies yielded mycobacterium tuberculosis. Postoperatively he was then started on REHAZ-E (rifampicin, pyrazinamide, isoniazid, ethambutol) for six months and has shown marked improvement.

## DISCUSSION

Abdominal tuberculosis denotes involvement of the gastrointestinal tract (GIT), peritoneum, lymph nodes and solid organs i.e. liver, spleen and pancreas. The involvement of the gastrointestinal tract is seen in 65-78% of patients with abdominal tuberculosis (6). The common sites of involvement are the terminal ileum, and ileocaecal junction, followed by the colon and jejunum. Rarely tuberculosis may involve the stomach, duodenum and oesophagus. The intestinal lesions produced by tuberculosis are of three types ulcerative, hypertrophic and sticturous. Many patients may have associated nodal or peritoneal involvement. The peritoneal involvement may be

adhesive or ascitic. Intestinal tuberculosis is more common among young adults.

The differentiation between intestinal tuberculosis and other chronic inflammatory bowel diseases based on clinical features, radiology, endoscopy and histology are often difficult as illustrated in this case report. It has been shown that chronic diarrhoea accounts for up to 40% of the initial presentation of intestinal tuberculosis, followed by abdominal pain and weight loss (10).

The colonoscopy features of colonic tuberculosis include erythema, mucosal nodules, ulcers, strictures and a deformed ileocaecal valve (8). These features are not specific and are also seen in Crohns disease. But the histological features are more diagnostic. Caseation if present will strongly suggest tuberculosis while central acute necrosis of granuloma may occasionally be seen in Crohns disease. The patient's chest X-ray showed no evidence of pulmonary tuberculosis which is not surprising since less than a half of the patients with abdominal tuberculosis have associated pulmonary tuberculosis and in one study the proportion was 19% (7).

Other methods of diagnosing intestinal tuberculosis prior to explorative laparotomy have been described. These include sonographic detection of a thickening of the bowel wall in the ileum, caecum and colon in association with ascites. Also increased mesenteric thickness has been reported. Pathologically this mesenteric thickenings result from lymphadenopathy, fat deposition and oedema due to lymphatic obstruction, which makes it more echogenic. Over the years a number of reports have been published highlighting the wide spectrum of abnormalities demonstrated on computed tomography (CT) (9, 11).

The most common findings on CT highly suggestive of abdominal tuberculosis are high density ascites, lymphadenopathy, bowel wall thickening and irregular soft tissue densities in the omental area (11, 12). Knowledge about the utility of magnetic resonance imaging (MRI) in abdominal tuberculosis is very limited. MRI when compared to CT added no more information to aid in the diagnosis.

Endoscopy is useful in diagnosis of GI tuberculosis where lesions are accessible. Endoscopic biopsy may not reveal granulomas in all cases as these lesions are submucosal. Multiple biopsies from the same site are advised to increase the yield. Endoscopic biopsy specimen may be subjected to polymerase chain reaction for detection of acid-fast bacilli (AFB).

This case report illustrates that the diagnosis of intestinal tuberculosis requires a high index of

suspicion. It also confirms that chronic diarrhoea is a common symptom of intestinal tuberculosis in immunocompetent patients. This case was probably due to laboratory exposure, in the university labs. Therapeutic trial of antitubercular treatment (ATT) is recommended by some authors in suspected cases of abdominal tuberculosis, when diagnosis can't be proved (14,15). However laparotomy is recommended where malignancy can't be ruled out with certainty. A mesenteric lymph node should be biopsied as caseation and granulomas are much more likely to be present in lymph nodes than intestinal wall lesions. Patients with intestinal obstruction due to strictures and hypertrophic lesions require surgical treatment.

Despite being a treatable disease, abdominal tuberculosis carries a mortality of 4-12% that is largely due to associated problems of malnutrition, anaemia, and hypoalbuminaemia and due to acute surgical complications. A high clinical index of suspicion and judicious use of diagnostic procedures can certainly help in timely diagnosis and treatment thus reducing of this curable but potentially lethal disease.

#### ACKNOWLEDGEMENT

To the Medical Co-ordinator and Administrator of the North Kinangop Mission Hospital for giving me permission to publish this study.

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