Case report

Radiological demonstration of colonic aphthoid ulcers in a patient with intestinal tuberculosis

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SUMMARY The case is described of a young Asian woman with massive rectal haemorrhage during and after pregnancy. Barium radiology showed aphthoid ulcers in the colon and changes in the ileum suggesting tuberculosis. Colonoscopy revealed hyperplastic ulceration in the terminal ileum and culture of biopsies from this area grew *Mycobacterium tuberculosis*. The patient made a full and rapid recovery on anti-tuberculous therapy. Colonic aphthoid ulceration has not previously been recorded, radiologically, in intestinal tuberculosis.

Aphthoid ulceration in the colon commonly occurs in Crohn's disease and may be present in more than 40% of cases examined radiologically¹ and may represent the earliest macroscopic lesion in this condition.² This feature has also been described pathologically in the colon of patients with amoebiasis,³ Behcet's disease,^{1,4} and radiologically in *Yersinia* enterocolitis.⁵ Radiographically, aphthoid ulcers appear as a central fleck of barium surrounded by a translucent halo usually set amidst a patch of normal mucosa.¹ To our knowledge these ulcers have not been described before in the colon of a patient with intestinal tuberculosis.

Case report

A 25 year old Asian woman was transferred to Leicester Royal Infirmary for management of diarrhoea and massive rectal haemorrhage after an emergency caesarian section. She had arrived from India four years previously and had been investigated elsewhere one year before this admission because of cough, malaise, anorexia, and intermittent fever. After extensive investigation a raised ESR of 73 mm/h, iron deficiency anaemia (haemoglobin 8 g/dl), and evidence of fat malabsorption were the only positive findings. A

chest radiograph was normal and a Heaf test negative. She had returned to India eight months before this admission and three months later developed diarrhoea which became progressively worse after her return to England one month later. The onset of vomiting, rigors, and a high swinging fever precipitated admission to another hospital where she was found to be 35 weeks pregnant. Her diarrhoea became bloody and required a six unit blood transfusion. Fetal distress ensued and she was transferred to Leicester Royal Infirmary Maternity Hospital where an emergency caesarian section was performed at 36 weeks' gestation.

Diarrhoea and bleeding continued and examination at this time revealed an emaciated, extremely ill woman with a swinging pyrexia up to 40°C, iron deficiency anaemia (Hb 10 g/dl), bilateral ankle oedema, an albumen of 20 g/l, ESR of 60 mm/h, serum mucoprotein of 4.4 g/l but a normal white cell count, blood cultures, blood film, stool microscopy, stool culture, rigid proctoscopy, urine microscopy and culture. Malarial parasites were not detected and a Heaf test was negative. She required a total of 12 units of blood and after empirical treatment with metronidazole her diarrhoea and bleeding ceased and her general condition improved. Albumen rose to 34 g/l, haemoglobin to 16.4 g/dl, further stools for microscopy, and culture for salmonella, shigella, *vibrio cholera*, ova, cysts, parasites and *Campylobacter* remained negative. Antibodies to *Entamoeba histolytica*, *Brucella* species and *Yersinia* were negative. Urine culture

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for *Mycobacterium tuberculosis* was negative. Serum autoantibodies, thyroxine, protein electrophoresis, and chest radiograph were also normal. She took her own discharge 12 days postoperatively and defaulted from outpatient follow up but was readmitted six weeks later.

At this time she gave a two week history of massive fresh rectal bleeding with diarrhoea, anorexia, cough, pyrexia, and rigors. Clinical examination revealed no new features but her haemoglobin was 7.3 g/dl and she required a four unit transfusion. White cell count was $14.3 \times 10^9/l$ with a normal differential, a 3 cm soft smooth hepatomegaly was present and the patient agreed to undergo further investigation in hospital. Rigid proctoscopy was again normal. Superior and inferior mesenteric angiography were performed during a bleeding episode and were normal. Double contrast barium enema revealed aphthoid ulcers of the transverse colon (Fig. 1) and contraction of the caecum. A subsequent small bowel barium infusion study showed grossly diseased distal ileal loops and terminal ileum with thickening of the bowel wall, coarse mucosal markings and displacement of loops. Patchy mucosal abnormalities were shown more proximally probably involving the ileum in total. These appearances suggest tuberculosis rather than Crohn's disease or lymphoma (Fig. 2). Total colonoscopy under sedation was performed four days after this study when the rectum and colon as far as

Fig. 1 Double contrast barium enema showing aphthoid ulcers in the transverse colon.

Fig. 2 Small bowel barium infusion study showing markedly abnormal terminal ileum and ileal loops with patchy mucosal changes more proximally. The caecum is contracted.

the caecum were found to be full of fresh and old blood limiting views of the colonic mucosa. On entry into the terminal ileum, however, multiple ulcers were seen with intervening hyperplastic mucosa forming a cobblestone appearance for the 15 cm observed and biopsies from this area revealed non-specific chronic inflammation without granulomata. Six week cultures of these biopsies were positive for *Mycobacterium tuberculosis*. She was commenced on rifampicin, isoniazid, and ethambutol. Bleeding ceased after 48 hours' treatment with concomitant general improvement and her temperature fell to normal on the third day of treatment remaining normal subsequently. She began to gain weight for the first time in three months of her diarrhoeal illness and over the next two months of outpatient follow up gained 15 kg. Serum mucoprotein, haemoglobin, and albumen returned to normal and small bowel absorption studies after one month of treatment were also normal. Heaf test remained negative.

Discussion

Radiologically the abnormalities in the small bowel were considered to be in favour of a diagnosis of tuberculosis. Certain features have been suggested to help distinguish tuberculosis from Crohn's disease such as marked caecal involvement, the presence of more irregular contours and coarser mucosal markings⁶ and with little small bowel involvement. Many authors feel, however, that the two conditions

are not distinguishable with any great certainty.⁷ Aphthoid ulcers have previously been radiologically demonstrated in the colon of patients with Crohn's disease¹ and *Yersinia enterocolitis*.⁵ Tuberculosis should now enter the differential diagnosis when aphthoid ulcers are shown and although random peritoneal biopsy through a small incision in the right iliac fossa has been suggested as being an extremely useful diagnostic procedure,⁸ we and others⁹⁻¹² feel that fiberoptic colonoscopy may provide the diagnosis from a colonic or terminal ileal biopsy from histopathological examination or culture as in our case.

Our patient is also unusual in that she presented during late pregnancy and also with massive rectal haemorrhage which is in itself a rare presentation of tuberculous enterocolitis.⁸

Investigation of our patient exemplifies the need to adopt a multidisciplinary approach to unexplained rectal bleeding and diarrhoea, and, as small aphthoid ulcers can be demonstrated with high quality double contrast barium technique, the possibility of tuberculosis as an explanation for these findings should be considered.

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