Ileocaecal tuberculosis
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Section: Abdominal imaging
Technique: CT
Technique: MR
Case Type: Clinical Cases
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Patient: 60 years, male

Clinical History:
Patient with a 6-month history of diarrhoea, weight loss, weakness, low-grade fever and episodes of abdominal pain in the right lower quadrant. CT, conventional enteroclysis and MR enteroclysis were performed.

Imaging Findings:
The patient presented with a 6-month history of diarrhoea, weight loss (about 6kg), weakness, low-grade fever and episodes of abdominal pain in the right lower quadrant. Mild tenderness was present on deep palpation of the abdomen. Laboratory investigations revealed mild anaemia with haemoglobin of 11.5g/dl and serum ferritin of 7.71. Serological testing for HIV, Yersinia, and E. histolytica was negative. Stool samples were negative for infectious organisms. The tuberculin skin test was negative. A chest radiograph showed no significant findings. On colonoscopy, a tumourous lesion was seen in the ascending colon near the caecum and histology showed chronic inflammatory changes and noncaseating epithelioid granulomas, findings consistent with Crohn's disease. The patient was treated with budesonide and mesalamine, but no improvement occurred.
Subsequent abdominal CT, performed to rule out abdominal abscess, revealed concentric mural thickening of the caecum and, to a lesser degree, of the terminal ileum with a few regional lymph nodes. Thickening of the peritoneum, mesentery and greater omentum together with a small amount of high-density ascites (30HU) was also evident (Figs 1,2). Conventional (Fig. 3) and MR enteroclysis (Figs 4-6) also demonstrated ileocaecal involvement and peritoneal changes.

Discussion:
Abdominal tuberculosis (TB) continues to be endemic in the developing world and has shown a resurgence in the West due to migration and the AIDS epidemic. Diagnosis of extrapulmonary TB is often difficult because of nonspecific clinical symptoms and inconclusive laboratory tests. Only 15% of patients with abdominal TB have evidence of pulmonary disease. The clinical, radiological and endoscopic findings are most likely to be confused with Crohn's disease. In this case, the initial diagnostic workup suggested Crohn's disease. However, imaging findings were not consistent with Crohn's disease and raised the possibility of TB involvement, thus avoiding unnecessary exploratory laparotomy. Following imaging evaluation, the patient underwent a second colonoscopy and new biopsy specimens were obtained. Ziehl-Neelsen staining showed acid-fast bacilli.
Intestinal TB is a rare manifestation of TB. The ileocaecal region is the most commonly involved area of the GI tract, noted in up to 90% of cases of intestinal TB. The bowel wall changes in imaging studies are presumably a
manifestation of the well known types of intestinal TB namely hypertrophic, ulcerohypertrophic, ulcerative and fibrous stricturing. In early disease there is slight and symmetric circumferential thickening of the caecum and terminal ileum and a few regional nodes. Later the ileocecal valve and adjacent medial caecal wall are predominantly and asymmetrically thickened. In more advanced disease gross wall thickening, adherent loops, large regional nodes, and mesenteric thickening can together form a soft-tissue mass centred around the ileocaecal region. Peritoneal involvement is usually associated with widespread abdominal disease involving lymph nodes or bowel. Peritoneal TB includes involvement of the peritoneal cavity, the mesentery, and the omentum. Enteroclysis most often shows a high-riding caecum with or without a string-like lesion of the terminal ileum. Computed tomography and MRI enteroclysis are capable of identifying changes in the bowel wall and peritoneum, which help further in the differentiation between intestinal tuberculosis and Crohn's disease. In this case, the smooth thickening and enhancement of the peritoneum and the coexistence of high density ascites together with ileocaecal wall changes were imaging findings favouring the diagnosis of TB infection. On CT, the fluid has high attenuation values in most cases, secondary to the high protein and cellular content.

Correct diagnosis is important since the use of steroids may have potentially disastrous effects in the presence of active TB. Six months after initiation of antituberculous treatment, the in this case patient was free of symptoms.

**Differential Diagnosis List:** Ileocaecal tuberculosis

**Final Diagnosis:** Ileocaecal tuberculosis

**References:**

Description: CT shows concentric caecal wall thickening with a narrowed lumen and mild asymmetrical mural thickening of the terminal ileum. Thickened folds of small bowel mesentery, smooth thickening of the parietal peritoneum and micronodular infiltration of the greater omentum are also present. Origin:
Description: CT through the pelvis shows evidence of high density ascites (arrow). Origin:
**Description:** Conventional enteroclysis shows a shortened and narrowed caecum retracted out of the iliac fossa. The proximal ascending colon is also narrowed presenting linear ulcers. The ileocaecal valve is enlarged with an inverted umbrella-like appearance. Extramucosal semilunar filling defects are seen at the antimesenteric border of the terminal ileum. **Origin:**
**Description:** Coronal true fast imaging with steady precession (FISP) image demonstrates circumferential, symmetric mural thickening of the conical-shaped caecum (arrow). **Origin:**
Description: Coronal true-FISP image shows circumferential thickening of ascending colon (arrow).
Origin:
Description: Axial true-FISP image shows enlarged ileocaecal valve and a slight mural asymmetric thickening of the terminal ileum (arrow). Origin:
Figure 6

Description: Post-gadolinium axial 3D FLASH T1-weighted image with fat saturation shows homogeneous enhancement of the thickened caecal wall. Smooth thickening and enhancement of the peritoneum (arrow) is also evident. Origin: