Unusual association of diseases/symptoms

Bowel obstruction caused by intestinal tuberculosis: an update

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Tuberculosis is one of the most important communicable diseases worldwide, with an increasing incidence within the UK. The abdomen is involved in 11% of patients with extra-pulmonary tuberculosis, and can provide a diagnostic challenge if not suspected. The authors report the case of a 31-year-old Sudanese female who presented with intestinal obstruction due to a mass caused by abdominal tuberculosis. Imaging revealed evidence of multifocal tuberculosis involving the ileo-caecal region with abdominal and mediastinal lymphadenopathy. She went on to have a limited right hemicolectomy and completed antitubercular therapy. It is important to consider abdominal tuberculosis when conditions such as Crohn's disease or gastrointestinal malignancy are being entertained in those from a high-risk background. Since diagnosis can be difficult, if clinical suspicion is strong, surgery is a safe option. Recommended management combines up to 12 months of antitubercular therapy with conservative surgery.

BACKGROUND

Tuberculosis is one of the most important communicable diseases worldwide and despite efforts for eradication worldwide, it has made a comeback, with increasing numbers of cases being detected within the UK due to factors such as immigration, ageing populations, alcoholism and AIDS.¹

The abdomen is involved in 11% of patients with extra-pulmonary tuberculosis.¹ It has been increasingly reported in parts of the world such as East Asia, Africa and the Middle East.²

Abdominal tuberculosis denotes the involvement of the gastrointestinal tract, peritoneum, lymph nodes and solid viscera. The common sites of involvement in the gastrointestinal tract are the ileum and the ileo-caecal region, followed by the colon and jejunum.^{3 4}

Typically, patients present with an abdominal mass or lump, which is usually firm, mobile and minimally tender. Subacute intestinal obstruction is also commonly seen, and evidence of malabsorption has been observed in up to 75% of cases with intestinal obstruction and 40% of those

without it. Rectal bleeding has also been reported in 4–6% of patients.^{5–9}

Systemic manifestations of tuberculous infection include low-grade fever, malaise, night sweats, anorexia and weight loss. These are present in about one-third of patients with abdominal tuberculosis.⁸

CASE PRESENTATION

A 31-year-old Sudanese female presented to the emergency department with an 8-month history of generalised abdominal pain, 2 months of right iliac fossa pain and a 2-week history of a right iliac fossa mass. Associated symptoms included night sweats, fevers, rigors and lethargy. She denied urinary symptoms, coughing or haemoptysis.

Cardiorespiratory examination was unremarkable and she had a 6×4 cm tender mass in the right iliac fossa of her abdomen. Initially, an appendix mass was suspected and a CT scan was carried out reporting features suggestive of multifocal tuberculosis involving the ileo-caecal region, with abdominal and mediastinal lymphadenopathy, thus an ultrasound guided biopsy of the abdominal mass and

Figure 1 (A) CT scan image showing obstructing lesion. (B) Axial view CT of obstructing lesion.

Figure 2 Histology: caseating granuloma.

lymph nodes was carried out. This subsequently reported negative for acid-fast bacilli and negative of malignancy. HIV testing after consent was also negative.

The patient was commenced on tuberculosis eradication therapy, with which her symptoms improved, so was discharged.

She was readmitted 1 month later with small bowel obstruction and a tender right iliac fossa mass 10×8 cm in size with distension but no peritonism.

INVESTIGATIONS

A repeat CT scan demonstrated complete bowel obstruction secondary to the disease in the terminal ileum. The small bowel was grossly dilated proximally and the colon was completely collapsed, with no passage of contrast (figure 1).

DIFFERENTIAL DIAGNOSIS

Inflammatory bowel disease/Crohn's disease or intestinal malignancy.

TREATMENT

In light of these findings, she underwent a laparotomy and limited right hemicolectomy with formation of an end to end anastomosis. Macroscopically the ileo-caecal mass was adherent to the retroperitoneum. There were also multiple enlarged lymph nodes in the mesentery, which were sampled.

OUTCOME AND FOLLOW-UP

The histology revealed increased eosinophils in the lamina propria with foci of acute inflammation, superficial mucosal ulceration and multiple confluent and necrotising

granulomas transmurally, with extensive necrosis (figure 2). Multiple lymph nodes sampled showed confluent granulomas with extensive caseating necrosis.

There were no features to suggest chronic inflammatory bowel disease, dysplasia or malignancy. Ziehl-Neelsen stains for acid fast bacilli (AFB) were however negative in multiple sections. These appearances indicated a diagnosis of intestinal tuberculosis despite the absence of AFB on special stains.

In the postoperative period, the patient returned to the ward after spending 4 days on the high dependency unit, and recovered well, to be discharged with a plan to complete her tuberculosis eradication treatment.

DISCUSSION

Abdominal tuberculosis most likely occurs due to reactivation of a dormant focus. The primary gastrointestinal focus is established as a result of haematogenous spread from pulmonary tuberculosis acquired in childhood. The bacilli pass through Peyer's patches of the intestinal mucosa and are transported by macrophages to the mesenteric lymph nodes, where they remain dormant. Suppression of host defences by conditions such as malnutrition, alcoholism, diabetes, chronic renal failure, immunosuppression and AIDS increases the risk of reactivation.¹⁰

Radiological investigations are the mainstay of diagnosis of abdominal tuberculosis, however, may not always be able to differentiate tuberculosis from Crohn's disease or malignancy.¹¹

Ultrasound guided fine needle aspiration cytology from the lymph nodes or the hypertrophic lesion may be performed. The yield of organisms from abdominal lesions is low because extra-pulmonary disease is paucibacillary, thus microbiological diagnosis is difficult, and usually histology

is relied upon. However, mycobacterial culture should be performed in all cases since it may be positive even in the absence of a characteristic histological appearance.¹²

It is important to consider abdominal tuberculosis in the differential diagnosis when conditions such as Crohn's disease or gastrointestinal malignancy are being entertained.¹³ It is especially important to differentiate it from Crohn's disease as steroids are the mainstay of treatment in this condition, but can be disastrous in tuberculosis.

Reports have been published, advocating a therapeutic trial of antitubercular therapy empirically without a definite diagnosis of tuberculosis.^{6 12–18} This would not be recommended, since it may delay the diagnosis and treatment of malignancy, lymphoma or Crohn's disease, which can mimic tuberculosis clinically and radiologically. Treatment can also alter the histological appearance of tuberculosis so diagnosis cannot be confirmed at a later date. It may also precipitate intestinal obstruction due to healing by fibrosis and cicatrization, or result in intestinal perforation.^{19 20} This is relevant as our patient initially responded well to treatment, but was readmitted with intestinal obstruction most likely due to the healing process by fibrosis, and oedema.

Delayed diagnosis and injudicious treatment due either to limited experience or poor understanding of the disease are reasons for the rate of mortality due to abdominal tuberculosis.²¹

Learning points

- ▶ Timely diagnosis with a high index of suspicion in geographical areas and populations in which tuberculosis is common, using a systematic diagnostic approach utilising radiology, endoscopy and pathology is required.
- ▶ Managing with a combination of antitubercular therapy and conservative surgery is key to reducing the mortality associated with abdominal tuberculosis.
- ▶ It is especially important to bear in mind the chance of precipitating bowel obstruction in the first few weeks after commencing antitubercular therapy.

Competing interests None.

Patient consent Obtained.

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