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Primary abdominal tuberculosis presenting as peritonitis in a young child-managed surgically

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ABSTRACT

Abdominal tuberculosis (TB) is the sixth commonest extra-pulmonary TB form after lymphatic, genitourinary, bone and joint, miliary and meningeal tuberculosis. We are presenting a rare case in a young female of age 7 year diagnosed as peritonitis and intestinal obstruction. Operative findings revealed dense fibrosis in interloops and perforation of the small bowel. She was put on antitubercular treatment for one year. Patient was discharged in satisfactory condition and is in follow up for 2 months.

1. Introduction

Tuberculosis is such kind of entity that should not be underestimated. It can affect anybody at any age. Abdominal tuberculosis (TB) is the sixth commonest extra-pulmonary TB form after lymphatic, genitourinary, bone and joint, miliary and meningeal tuberculosis. TB may involve any site of the gastrointestinal tract, but the commonest site of involvement is ileocecal region[1]. Peritoneal TB is the most common form of abdominal TB after gastrointestinal TB and is comprised of 0.4%-2% of cases of TB in general. It is the sixth leading cause of extrapulmonary TB after lymphatic, genitourinary, bone, miliary and meningeal TB[2]. Perforation is a serious and uncommon complication of abdominal TB[1]. The authors present a case of abdominal TB which was manifested by intestinal perforations and stricture.

2. Case report

A 7-year young female presented with abdominal pain, vomiting, and constipation for 10 days. She had similar episodes off and on for 1 month which was relieved with medicine. Now patient had sudden onset of severe abdomen pain and distention. She was in shock (blood pressure-90/60 mmHg, pulse-116/minute) and total leukocyte counts- 13 200/mm^3 were raised, urea-85 mg/dL, creatinine -3.1 mg/dL. Abdomen examination revealed generalized distention and tenderness. Chest X-ray showed no gas under diaphragm. X-ray of the abdomen in erect/supine position and on ultrasonography, there were multiple air fluid levels

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and dilated loops (Figure 1). Final diagnosis was kept as intestinal obstruction and peritonitis. On laparotomy, dense adhesions and fibrosis was present. In pelvis, dilated loops were encapsulated in form of cocoon with bilious fluid. In this area we found perforation and stricture of the ileum 1 foot proximal to the ileo-caecal junction (Figure 2). There were also small whitish nodules over the intestinal, abdominal wall in retroperitoneal area. Adhesiolysis and excision of the fibrous bands were done with thorough wash given to the abdomen. The patient was in septicemia. Gross specimen revealed stricture in the small bowel and multiple small nodules over the surface (Figure 3). Histopathological examination of the resected segment of the ileum came as tuberculosis. She was later transferred to acute respiratory distress syndrome and managed with third generation antibiotics, steroids-4 mg twice a day and diuretics. On 6th post-operative period she was put on antitubercular therapy (rifampicin, isonaizid, ethambutol and pyrazinamide) along with intramuscular - streptomycin-0.75 mg and intravenous amikacin 500 mg once a day. She was discharged on 12th day of surgery.

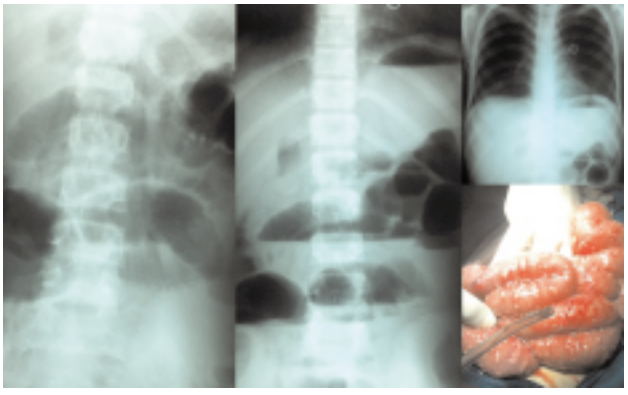

Figure 1. X-ray abdomen in erect and supine position showed dilated loops alongwith multiple fluid levels.

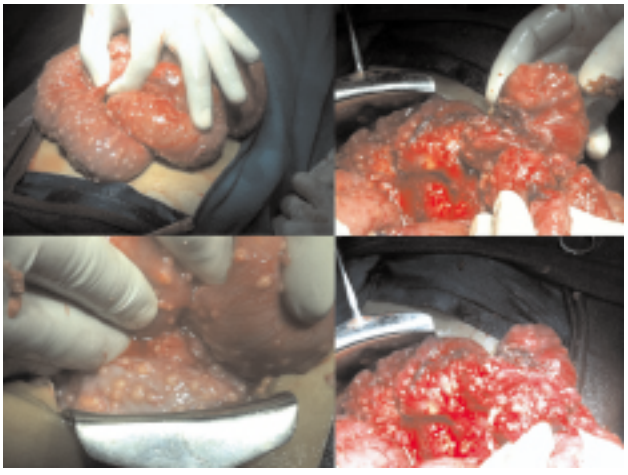

Figure 2. Operative picture showing dense fibrosis and dilated bowel loops.

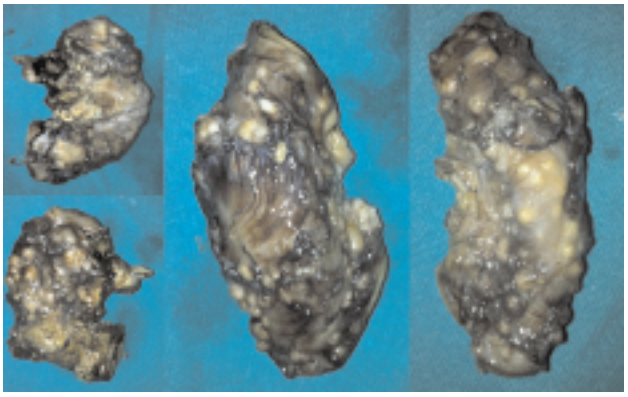

Figure 3. Gross cut section of the specimen revealed stricture and nodules over the surface.

3. Discussion

Peritoneal TB is a misdiagnosed clinical entity of low frequency. Due to its rarity, it requires a high index of suspicion in clinical practice. Its incidence has been increasing in recent years. Abdominal tuberculosis is defined as infection of the peritoneum, hollow or solid abdominal organs with mycobacterium tuberculin[3]. There are many case reports of tubercular ileal perforation in adults but it is very rare in children[4-9]. Abdominal cocoon is a rare cause of bowel obstruction. The condition was first described three decades ago and is found mainly among adolescent females in tropical and sub-tropical countries. It is characterized by a thick fibrous membrane encapsulating the small intestines partially or completely[10]. The incidence of peritoneal tuberculosis was reported as 0.5% of 50 000 patients per year in Japan. Peritoneal tuberculosis is classified as: wet tuberculous peritonitis with ascites, dry form without ascites and caseous form with caseation necrosis[10]. Pathogenesis usually involves peritoneal infection via hematogenous spread or direct extension from an intestinal site or pelvic organ. Both visceral and parietal peritoneal layers are affected with the formation of multiple tuberculous nodules and ascites. The clinical presentation is that of a slowly progressive abdominal swelling due to ascites and abdominal pain. Constitutional symptoms of fever and night sweats may be present. Small-bowel obstruction can occur due to adhesions. Diffuse abdominal tenderness, doughy abdomen, hepatomegaly, and ascites may be noted on physical examination. Tuberculin skin tests are positive in two-thirds of cases. Diagnosis is often delayed due to non-specific symptoms and physical findings[11-13].

Perforation is a serious complication of abdominal TB, associated with high morbidity and mortality[14]. The low incidence of tuberculous perforation is due to reactive fibrosis of the peritoneum[14]. Abdominal TB has been considered as a fatal and untreatable disease for years.

Before the discovery of effective medical therapy for TB (TBMT) there was no hope for recovery of patients with abdominal TB. Even when such a patient recovered, it was ascribed to false diagnosis and not to true cure[15].

Reactive fibrosis of the peritoneum and formation of adhesions with adjacent tissues accounts for the low incidence of the perforation (0%-11% in adults, 3%-4% in children, 2.5%-6.0% at autopsy, and 20% of all non-appendiceal perforations) reported in literature[13]. Most of the perforations were solitary and located in the ileum. Perforations were present both proximal to and at the site of the stricture, as reported[13]. Multiple perforations occur in 40% of the patients and are associated with a poor prognosis[15]. As a conclusion, in patients with ascites and diffuse intra-abdominal implants without any obvious primary tumor intra-abdominally, abdominal tuberculosis should be thought in differential diagnosis[16]. There are many case reports of tubercular ileal perforation in adults but in children it is very rare[17].

Nowadays, general surgeons have less chance to encounter tuberculous peritonitis during their residency period, so they lack adequate experience and knowledge for management of these patients and as a consequence, they might be involved in a series of postsurgical problems.

The locations of abdominal TB and its clinical presentation can vary and can rarely be estimated. TB should always be considered in patients living in an endemic region and/or if the patient is immunosuppressed, in order to make an early diagnosis, begin treatment should be applied to prevent complications[18,19]. In order to be successful, a directly observed treatment must be performed in cooperation with TB control units.

TB peritonitis may be fatal but is medically cured if diagnosed in a timely fashion. It is essential that the clinician suspect the disease in appropriate patients.

Conflict of interest statement

We declare that we have no conflict of interest.

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