

Abdominal tuberculosis in children-Case Report

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Abstract

Eleven years old female child was admitted with fever, night sweating and abdominal distension for one week. Biopsy-aimed laparoscopy was conducted. Laparoscopy findings suggested the diagnosis of abdominal tuberculosis and culture confirmed the diagnosis. Histopathological examination revealed a granulomatous inflammatory process, which is compatible with tuberculosis. Anti-tuberculosis treatment was started immediately. The disease can have varied presentation, frequently mimicking other common and rare diseases. The clinician must look for tuberculosis, and confirm or exclude this treatable malady in any patient who presents with gastrointestinal disease.

Key words: Tuberculosis, Abdominal, laparoscopy

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Introduction

Tuberculosis is a worldwide disease. With the recent resurgence of tuberculosis infections; the interest in abdominal tuberculosis (TB) has been renewed. Abdominal TB may present with non specific findings and may mimic a multitude of gastrointestinal disorders. It still remains a difficult disease to diagnose in the operating room [1,2]. The following report highlights one such case, where the final diagnosis was a remote possibility depending on initial findings. We also emphasize the role of minimally invasive surgery in reaching the final diagnosis in such cases.

Case report

Eleven years old female child was admitted to the hospital with one week history of generalized abdominal distension associated with fever and night sweat without history of exposure to tuberculosis. Physical examination revealed generalized abdominal distension with ill-defined fullness in periumbilical area and ascites. There was no organomegaly or lymphadenopathy. BCG vaccination scar was present. Tuberculin skin test showed 8 mm induration after 72h. The white blood cell (WBC) count and erythrocyte sedimentation rate were 5800/mm³ and 45 mm/h, respectively. The chest X-ray was normal and massive ascitis was detected by abdominal ultrasonography. Abdominal Computerized Tomography (CT) revealed a diffuse small bowel wall thickening with congested mesentery and thickened peritoneum suggestive of inflammatory or malignant process. However, ascitic tap revealed exudative type of fluid which was negative for acid fast bacilli and malignant cells. Based on these find-

ings, biopsy-aimed laparoscopy was conducted. During laparoscopy there was a nodular peritoneal surface and matted loops of bowel with significant adhesion and nodular bowel surface. According to the laproscopic findings the diagnosis of abdominal tuberculosis was highly suspected. A positive culture for Mycobacterium tuberculosis from the omental tissue and mesentric lymph node confirmed abdominal tuberculosis. Gastric, intestine and rectal biopsies were unremarkable. Histopathological examination revealed caseating granulomatous lesion compatible with TB. Anti-tuberculosis treatment with Isoniazid, Rifampicin, and Pyrazinamide was given to patient for two months and then continued with Isoniazid & Rifampicin for 10 months. Patient followed up for 2 years with evidence of clinical and radiological improvement. We screened the whole family for tuberculous infection and two siblings with positive tuberculin skin test were treated as latent tuberculosis infection (LTBI).

Discussion

Tuberculosis is a common chronic inflammatory disease in the developing countries. The abdomen is one of the common sites of extrapulmonary TB involvement [3,4]. Abdominal TB was a common disease in the industrialised countries during the turn of the 20th century. During the ensuing decades, there was a steady decline in the incidence attributed to improvement in nutrition, living conditions and the development of the specific drug therapies. By 1970s, it was rarely seen in industrialised countries, and most reports dealt with its incidence in immigrant and third world population [1]. After a period of steady decline in the incidence of tuberculosis, a resurgence of the disease has occurred since the mid 1980's.

Abdominal tuberculosis is defined as infection of the peritoneum, hollow or solid abdominal organs with mycobacterium tuberculi. Although most cases of abdominal TB are due to a pulmonary source, it is apparent in less than 50% of the patients [5]. Tuberculosis mycobacterium can reach the gastrointestinal tract via haematogenous spread, ingestion of infected sputum, or direct spread from infected contagious lymphnodes and fallopian tubes. There were three patterns of clinical presentation of abdominal T.B ie; a) intestinal, b) peritoneal, c) nodal as noted by Ramesh et al [6] and Kapur [7] in their studies. The gross pathology is characterized by transverse ulcers, fibrosis, thickening and stricturing of the bowel wall, enlarged and matted mesenteric lymphnodes, omental thickening, and peritoneal tubercles. The peritoneum and the ileocaecal region are the most likely sites of infection and are involved in the majority of the cases [4]. The most common form of abdominal TB in children is adhesive peritonitis and nodal disease. Strictures are uncommon, and the hypertrophic form is rare [6,8]. The diagnosis of abdominal TB is difficult especially in children due to its vague clinical picture, and the diagnosis is often delayed. Abdominal TB need to be considered in the differential diagnosis of the acute abdomen.

The main symptom is abdominal distension seen in 82%. Common symptoms are abdominal tenderness (75%), fever (74%), weight loss (62%), abdominal pain (58%) and diarrhea (16%) [6]. The patient was admitted to the hospital for fever, night sweat and abdominal distension for only one week. Routine laboratory tests provided non-specific data. Abdominal CT and US were performed as radiological studies. It was assumed that the ascitis and thickening of bowel wall and peritoneal structure were secondary to inflammatory or malignant process. However, the diagnosis could not be established pre operatively.

During laproscopic examination, a nodular peritoneal surface and matted loops of bowel with significant adhesion and nodular bowel surface was described. The case was suspected diagnosed as abdominal TB during operation. However, as retrospective paustian criteria to diagnose abdominal tuberculosis was compatible with our case [9]. In the literatures, no single CT feature is mentioned as diagnostic of the disease. CT findings, when interpreted in the light of clinical and laboratory data can be a valuable tool in the diagnosis of abdominal TB [10]. Laparotomy can be avoided and less invasive methods such as laparoscopy may be used. Also with the use of abdominal paracentesis the diagnosis could be accurately made, but laparoscopy will give a better exposure to whole abdominal cavity, and better tissue sampling. Laparotomy must be used for complication such as obstruction, perforation, abscess, and fistulization. The authors recommend ex-

plorative laparotomy or laparoscopy is reserved for uncertainty and complications [11,12].

Conclusion

Abdominal TB in children is of a non-specific nature and defies diagnosis with non-invasive investigations; so that laparotomy or laparoscopy is required for a definitive diagnosis in the majority of the patients. The abdominal TB, which has recently resurfaced with HIV infections in the developed countries, has never lost its importance in the developing countries. It should be kept in mind and considered by the clinician, even with short history of presentation. This case report is of unusual presentation of a common disease which can be treated successfully if diagnosed early.

References

1. Amber AG, Unsup K. The Reappearance of abdominal tuberculosis. *Surg. Gynecol. Ob Stret.* 1991; 172: 432-436.
2. Hossein J., Mindelzun R.E., Olcott E.W., Levitt D.B. still the great mimicker: abdominal tuberculosis. *AJR* 1997; 168: 1455-1460
3. Shahzad R, Osman L, Abid KJ, Khan SA, Shah TA . Epidemiology, clinical presentation and site of involvement in abdominal tuberculosis-a retrospective study. *Ann KE med call* 1999; 5: 228-229.
4. Sharma MP, Bhatia V. Abdominal tuberculosis review article. *Indian J Med Res* 2004, 120: 305-315.
5. Agarwal P, Malpure S, Rajashankar S, Dhende NP, Das SA et al . Surgical treatment for abdominal tuberculosis. A retrospective study, *Bombay Hospital Journal* 1999; 41:3-4.
6. Veragandham RS, Lynch FP, Caniy TG, Collers DL, Danker WM. Abdominal tuberculosis in children: Review of 26 cases, *J Pediatric Surg* 1996; 31(1):170-175.
7. Kapoor VK. Abdominal tuberculosis. *Postgraduate Med Jour* 1998; 74: 459-467.
8. Niall OA. Abdominal tuberculosis. *World J Surg.* 1997; 21:492-199.
9. Paustian FF. Tuberculosis in the intestine. In: Bockus HL, editor. *Gastroenterology*, vol II, 2nd ed. Philadelphia, W B Saunders Co.; 1964 p. 311.
10. Tariq S et al. CT features in abdominal TB: 20 years experience.. *BMC Medical Imaging* 2002, 2: 3
11. Apaydin B., Paksoy M., Bilir M., Zengin K., Saribeyoglu K., Taskin M. Value of diagnostic laparoscopy in tuberculous peritonitis. *Eur J Surg* 1999; 165: 158-163.
12. Chowa KM, Chowb VC, Szeto CC. Indication for peritoneal biopsy in tuberculous peritonitis. *The American Journal of Surgery* 2003; 185 (6): 567-573

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