CASE REPORT

ABDOMINAL TUBERCULOSIS IN A 3-YEAR-OLD CHILD

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ABSTRACT

We report the first case of abdominal tuberculosis in our region, deciding to share our experience in the diagnosis and treatment. In our report, we discussed the diagnostic and treatment criteria of the abdominal tuberculosis case. A multiple drug regimen might be useful for abdominal tuberculosis and at least 9 months of follow-up is needed. In the light of the literature, we found out that laboratory and radiological examinations might have been confusing and the real diagnosis could be reached through explorative laparotomy or laparoscopy

Keywords: Tuberculosis, Extrapulmonary, Abdominal, Children

ÜÇ YAŞINDAKİ BİR ÇOCUKTA ABDOMİNAL TÜBERKULOZ

ÖZET

Bölgemizdeki ilk abdominal Tüberkuloz vakası rapor edilmiştir ve teşhis ve tedavideki tecrübemizin paylaşılması düşünülmüştür. Yazımızda, teşhis ve tedavi kriterleri tartışılmıştır. Çoklu ilaç uygulaması abdominal tüberkuloz tedavisi için uygun görülmektedir ve en az 9 ay tedavi gerekmektedir. Literatür ışığında laboratuar ve radyolojik değerlendirmelerin karışıklığa sebep olabileceği ve gerçek teşhisin sadece eksploratif laparotomi ile yapılabileceği düşünülmüştür.

Anahtar Kelimeler: Tüberkuloz, Ekstrapulmoner, Abdominal,Çocuk

INTRODUCTION

Abdominal tuberculosis is a rare manifestation of tuberculosis[1]. Treatment may be delayed because diagnosis is difficult due to lack of specific symptoms and pathognomonic findings. However, early diagnosis is important in order to perform an effective management and to decrease morbidity and mortality.

In Turkey, abdominal tuberculosis has been seen in 27/100 000 people[2]. A few of the pediatric patients were from Turkey. In a study, it was reported that five of 1700 pediatric tuberculosis patients were defined with abdominal tuberculosis in Centers for Disease Control and Prevention (CDC) reports in 1992[3]. Two reports from Turkey were about abdominal tuberculosis and one of them contained adult patients too.[2,4].

As it is a rare disease, we aimed to discuss the diagnosis and treatment of the abdominal tuberculosis in the light of the literature and

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to report our difficulties and experiences with a 3-year-old patient.

CASE REPORT

A three-year-old patient was referred to our pediatric surgery clinic after suffering from abdominal distention for a month. He had lack of appetite, breathing difficulties and drowsiness. Blood chemistry and urinary analyses were normal. The erythrocyte sedimentation rate (ESR) and blood counts were non-specific. Blood smear revealed lymphoid activity. Tumor markers were normal. Abdominal X-ray seemed to be normal. The tuberculin skin test was not performed because tuberculosis was not considered as the cause. In the abdominal ultrasound examination (USG), ascites was defined and multiple polypoid lesions were seen in the parietal and visceral peritoneum. The computerized tomography (CT) findings were the same as the USG, and nothing additional was reported. Explorative laparotomy was performed to evaluate the peritoneal carcinomatosis-like lesions (Fig.1). There were dense adhesions between the intestinal segments and multiple polyps were detected on the peritoneum and on the intestines. Peroperatively, tuberculosis was suspected because of the granulomatous lesions. Biopsies from the mesentery and the peritoneum were obtained, but biopsies from the intestine were not obtained because of the high risk of fistula formation.

Pathological evaluation of the specimens revealed fibroblastic proliferation with histiocytes, lymphocytes and polymorphonuclear leucocytes in all specimens. Langhans cells were defined in granulomatous lesions. Acid-Fast bacilli (AFB) were not detected.

Bacillus Calmette-Guerin (BCG) vaccine had been administered to the patient through Ministry of Health Vaccination Program.

The patient was diagnosed as abdominal tuberculosis with mesenteric, intestinal and peritoneal invasion and given a treatment protocol consisting of pyrazinamide (30 mg/kg) P.O., for 2 months, prednisolone (1/mg/kg) P.O., for 15 days, rifampisin (20 mg/kg) P.O., for one year, streptomycin (20 mg/kg) I.M., for two months and isoniazid (10 mg/kg) P.O., for one year.

Treatment was concluded with remission in a year. No complications occurred during this period. After the treatment, abdominal computerized tomography and USG evaluations were performed and no lesions on the mesenteric, intestinal and peritoneal regions were detected.

Figure 1: Peroperative photograph showing multiple polypoid lesions on the small intestine.

DISCUSSION

Abdominal tuberculosis is a rare disease that can be challenging in diagnosis even for a reference hospital. Routine evaluations may be done for tuberculosis but pathognomonic laboratory or radiodiagnostic tests are absent[2,4]. In our institute, this patient was the first case of abdominal tuberculosis, causing another difficulty in diagnosis. There were differences in the laboratory findings according to the literature.

In the literature, patients of different ages were reported. The pediatric patients were between 6 months and 16 years old. There were two series for all ages reported from Turkey for abdominal tuberculosis[2,4]. In these reports, a high percentage was from the pediatric population and median ages were reported as 7 years and 16.2 years.

Our patient had had the BCG vaccination in his history. Progressive primary complex among the BCG vaccinated group has been increasing[5]. However, the prevalence of abdominal tuberculosis is reported to be almost same over the last 16 years and occurs more in the BCG non-vaccinated children[5]. Disseminated mycobacterial infection after bacillus Calmette-Guerin vaccination is a very rare disorder, and often occurs in patients with immunologic deficiency[6]. Patients with abdominal tuberculosis may be treated with chemotherapy if they have had the BCG vaccination and if other findings are obviously targeting the disease[2].

Erythrocyte sedimentation rate can be helpful in evaluating the tuberculosis[2]. ESR was reported to be high in the literature, but not in our patient. If suspected, ESR may be a guide for the diagnosis, but, as in our patient, it may be within the normal range.

Ultrasonography and computed tomography may be used for the diagnosis[2]. The most common findings have been reported to be ascites, lymphadenopathy, thickness of the mesenterium and the peritoneum[2,3,7]. In a study, thickness and fine septation was found to be the most common findings[2]. USG and CT may be added to the BCG vaccination, ESR elevation, positive tuberculin test and family story to treat the tuberculosis, if biopsy is not possible[2].

Peritoneal biopsy with explorative laparotomy or laparoscopy may be indicated[2,4,7]. If the treatment is planned without biopsy, careful evaluation of the laboratory findings have to be performed[2]. In biopsy evaluations, mycobacterium tuberculosis may not be detected but granulomatous lesions with caseous necrosis are almost always revealed with the disease. Cytological evaluation of the organism is not always helpful for the microorganisms.

As the culture and AFB positivity of the peritoneal fluid are rarely seen, histological and bacteriologic confirmation may be the only way to make a diagnosis[2,3]. In a study, it was reported that Mycobacterium tuberculosis DNA was detected by nucleic acid amplification using real-time polymerase chain reaction (PCR) testing in the peritoneal fluid sample[8]. For appropriate treatment, PCR is a rapid diagnosis of abdominal tuberculosis[9].

Granulomas constitute the characteristic lesions of tuberculosis[3]. In our case, as the biopsies revealed granulomatous lesions and the clinical progression differentiated some of the other granulomatous lesions like Crohn's disease, we started chemotherapy without PCR evaluation.

Chemotherapy is defined as multiple antituberculosis drugs for at least one year of therapy. In a study, isoniasid (10 mg/kg P.O., for one year), rifampicin (20 mg/kg P.O., for one year), pyrazinamide (30 mg/kg P.O., for the first 2 months), and streptomycin (20 mg/kg I.M., for the first month was used for treatment[4]. In another study, ethambutol (20 mg/kg per day) was also used[2]. We also used prednisolone, 1mg/kg/day for 15 days. The recommended antituberculous treatment of extrapulmonary TB in children includes the use of a three-drug regimen(ısoniazide, rifampin, and pyrazinamide)[3,4,10]. Also streptomycin can be used in this combination[4]. Some clinicians administer corticosteroids routinely for the first 2 or 3 months against fibrosis[3]. Mortality has decreased from 50 to 3% with the introduction of anti-TB drugs[1].

We followed-up the patient for a year with the therapy. The patient is healthy and has no symptoms of the disease now. We will continue to evaluate the patient with clinical and radiological examinations. In one of series reported from Turkey, patients were followed-up for 9 months and all of them recovered from the disease. We also followed up our patient for a year and evaluated the progress of the disease.

In our region, this is the first patient reported and there are some clinical and laboratory differences from the other patients reported in the literature. Our patient was admitted to our clinic with abdominal distention and he did not suffer from abdominal pain. Also it was reported that ESR would be high in reported

patients but in our patient ESR was within the normal range. We experienced that exploration of the abdomen and peritoneal and mesenteric biopsies were the only ways to help make a diagnosis.

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