Retroperitoneal abscess: an uncommon localization of tubercular infection

Ascesso retroperitoneale: una rara localizzazione dell’infezione tubercolare

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INTRODUCTION

Incidence of tuberculosis (TB) infection has considerably increased during the past 20 years due to the HIV pandemic, and continues to be one of the most prevalent and deadly infections worldwide. In sub-Saharan Africa TB and HIV coinfection rates range from 60% to 70% [1]. Whereas in immunocompetent hosts, infection is usually limited to the lungs, 50% of the HIV-infected patients have extrapulmonary involvement [2]. The most commonly affected extrapulmonary sites are lymph nodes, pleura, genitourinary tract, bones and the central nervous system, but pulmonary involvement is usually associated. Intestine, peritoneum, and lymph nodes are the more common localizations when TB affects the abdomen [3].

CASE REPORT

A 29-year-old Nigerian male, immigrating to Italy 2 years before, was admitted to our Department in February 2008 with a history of fever and pain on the chest and left flank, exacerbated by breathing, lasting for the previous 2 weeks. He denied any drug therapy or recreational drug abuse.

In his medical history there was an acute abdomen in August 2007, due to splenic and pancreatic abscesses, which required splenectomy and partial pancreatic resection. Histopathological examination showed granulomatous inflammation of the spleen (Figure 1). Tissue sections were negative under Ziehl-Neelsen staining and Grocott’s methenamine silver stain for fungal elements. Cultures from surgical drainage were negative for aerobic and anaerobic bacteria. HIV test was negative.

Upon admission to our ward, physical examination revealed a tender swelling on the left flank (Figure 2). His body temperature was 37.5 °C, blood tests revealed an increased erythrocyte sedimentation rate (74 mm/1°h) and C-reactive protein (93 mg/L), associated with leucocytosis (GB 14.000/mm³), monocytosis (14%) and mild anaemia (haemoglobin 10.2 g/dL). A chest roentgenogram was normal. An ultrasound examination of the abdomen showed a cystic mass lesion of 7x4 cm in the upper pole of the left kidney. An abdomen CT scan showed an abscess extending from the left subfrenic space to the area between the quadratus lumbarum and the transversus abdominis muscles, without lymph node involvement (Figure 3). An MR scan of the spine excluded a spondylodiscitis. Repeated blood cultures for aerobic and anaerobic bacteria did not produce any growth, peripheral blood CD4 count was in the normal range, and twice repeated HIV tests, Widal-Wright agglutination, hepatitis B and C antibodies, were all negative. A tuberculin skin test showed 20 mm of induration after 48 hours, and the QuantiFERON TB-Gold interferon-
gamma assay was positive. Surgical drainage of the abscess was performed and sent to a laboratory for mycobacteriological analysis. The specimen was inoculated onto two conventional media: a solid egg-based Lowenstein-Jensen medium (bio-Merieux) and a liquid MGIT 7H9 Middlebrook medium (Becton-Dickinson, USA). Ziehl-Neelsen staining of the specimen showed the presence of acid-fast bacilli. After 12 days, the *Mycobacterium tuberculosis* complex was identified from the positive cultures with DNA probe technology (ACCUPROBE; Gen-Probe, San Diego, California). The isolate was susceptible to all anti-TB first-line drugs. Antitubercular therapy was started with isoniazid (300 mg once daily), rifampin (600 mg once daily), pyrazinamide (2000 mg once daily) and ethambutol (1200 mg once daily). After three days the fever disappeared, and the patient remained apyretic throughout hospitalization. A CT scan performed after three weeks showed a significant reduction of the abscess (Figure 4), and the patient was discharged asymptomatic with the same antituberculosis therapy.

**DISCUSSION**

Retroperitoneal abscesses are often polymicrobial and the predominant isolates are *Escherichia coli*, *Klebsiella pneumoniae*, *Enterococcus* spp., and *Staphylococcus aureus* [4]. Abdominal TB is uncommon and generally found in patients with severe disseminated disease [5]. Most of the cases resulted from a miliary tuberculosis which is usually secondary to lympho-haematogenous spread from a primary lung focus, or may result from a direct extension from...
an adjacent organ or bacilli ingestion [6]. Moreover, tuberculosis more frequently affects non-immunocompetent hosts, such as HIV-infected subjects or patients with diabetes mellitus and end-stage renal disease [7]. In this case, immunosuppression could be excluded given the past medical history, negative routine blood tests, normal immunoglobulin levels, CD4 count and repeatedly negative HIV tests. However, the patient came from an endemic area and reactivation of latent infection should be regarded as possible, even in an immunocompetent host. A recent large-scale epidemiological study showed that in a low-prevalence country like Italy, TB disease is largely related to HIV infection only in in-born patients [8, 9]. Therefore, in this case, diagnosis of abdominal TB abscess had to be considered during the first hospitalization on the basis of histologic specimens of the spleen, which revealed granulomatous inflammation, even in the presence of a negative Ziehl-Neelsen stain; culture of surgical drainages for *Mycobacteria* and tuberculin skin test were not performed at this time.

**CONCLUSIONS**

Tubercular aetiology of an abdominal abscess must be suspected in immunocompetent hosts if coming from endemic areas, even in the presence of isolated extrapulmonary localization.

**Key words**: tubercular abscess, retroperitoneal abscess, immunocompetent host.

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**REFERENCES**