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Mediastinal tuberculosis in an immunocompetent patient: *a clinical case*

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ABSTRACT:

Among the infectious diseases, tuberculosis is the leading cause of illness and mortality globally. Extrapulmonary TB (EPTB) accounts for 20-25% of reported cases, with lymph nodes being one of the most frequent locations involved.

We describe a case of mediastinal lymph nodes tuberculosis associated with mesenteric involvement, responding to antimycobacterial treatment.

Keywords: Lymph nodes, Tuberculosis, Case-report, Mediastinum, Extrapulmonary

BACKGROUND

Among the infectious diseases, tuberculosis is the leading cause of illness and mortality globally. According to WHO, in 2014, 9,6 million of people were affected by tuberculosis and 1,5 million died because of it[1].

In Italy, 1476 new TB cases have been reported in 2014, with an incidence of 2,4 cases per 100,000 people[2].

Extrapulmonary TB (EPTB) accounts for 20-25% of reported cases, with lymph nodes being one of the most frequent locations involved[3].

CASE PRESENTATION

A 22 years old Italian male was admitted to the Infectious Diseases ward because of a positive tuberculin skin test (TST) and a chest CT scan revealing necrosis of mediastinal lymph nodes and a subpleural nodule in right upper lobe.

Before the admission in our ward, the patient underwent a bronchoscopy during which a fine needle aspiration (FNA) of the interested lymph nodes and a broncho-alveolar lavage (BAL) were performed. Direct examination with Ziehl-Neelsen stain, Proteinase Chain Reaction-Real Time (PCR-RT) and cytological examination were performed both on the FNA sample (FNAS) and the BAL fluid (BALF).

PCR-RT of the FNAS showed a positivity for *Mycobacterium tuberculosis* susceptible to Rifampin, and the cytological examination of the same sample highlighted the presence of granulomatous and epithelioid cells, lymphocytes and necrosis signs, while direct examination with Ziehl-Neelsen stain was negative both on FNAS and BALF.

Immediately after admission, he started a standard treatment for tuberculosis with rifampin 10 mg/kg/day q24h, isoniazid 5 mg/kg/day q24h, pyrazinamide 20 mg/kg/day q24h, ethambutol 20 mg/kg/day q24h.

A rapid elevation of transaminases led us to interrupt rifampin and isoniazid and to start moxifloxacin 400 mg q24h, with normalization of hepatic cytolysis. After a few days, rifampin was reintroduced, with no signs of hepatotoxicity. The patient continued treatment with moxifloxacin, pyrazinamide, ethambutol and rifampicin.

A full virology screen including HIV, hepatitis C and syphilis resulted negative. He was vaccinated for hepatitis B and had past immunity for Epstein Barr Virus and Cytomegalovirus.

A whole body PET-CT Scan showed an improvement in the mediastinal lymphadenopathy, but it also revealed new nodules of few millimeters in the right lobe, mesenteric lymphadenopathies and two osteolytic lesions on the L4 vertebra.

The patient had a positive outcome, thanks to an optimal compliance to the treatment and tight follow-up visits. He did not experience any organ failure.

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CONCLUSIONS

Mediastinal masses need an accurate examination because of the many differential diagnosis, such as lymphoma, thymoma, germ cell tumor, thyroid enlargement, vascular lesion, lymphadenopathy, cystic (pleuro-pericardial or bronchogenic) lesions, tuberculosis[4]. A full hematologic screening, including relevant tumor markers such as βhCG and α-fetoprotein, should be performed in order to achieve the right diagnosis. Moreover, CT-scan could help in differentiating between tuberculosis and lymphoma, as showed by Tang[5], with a more homogeneous pattern in lymphoma (more than 80% of cases) than tuberculosis (8%) and a peripheral enhancement in 78% of TB cases, compared to less than 10% of lymphoma.

Mediastinal tuberculosis is not common in adult immunocompetent patients. Indeed, there is few documentation on scientific literature using as key words "mediastinal tuberculosis" AND "immunocompetent" AND "adult". Our case, then, is an uncommon tubercular clinical presentation in an immunocompetent patient.

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