Mycobacterial spindle cell pseudotumor in a woman with HIV

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ABSTRACT

Mycobacterial spindle cell pseudotumor (MSP) is a rare benign entity characterized by tumor-like proliferations of spindle-shaped histiocytes containing acid-fast positive mycobacteria. MSPs tend to occur predominantly in immunocompromised individuals and are concerning for a malignant neoplasm. We report a case of MSP occurring in a woman with human immunodeficiency virus and a tumor-like mass in the abdomen. A subsequent biopsy revealed MSP, which was successfully treated with antimycobacterial therapy.

KEYWORDS Acid-fast bacilli; mycobacteria; spindle cell pseudotumor

CASE DESCRIPTION

A 42-year-old woman with a long-standing history of human immunodeficiency virus (HIV) infection presented to the emergency department with fever, chills, night sweats, weight loss, and abdominal fullness over the past several weeks. On admission, she had a hemoglobin of 9.8 g/dL, hematocrit of 27.6%, and white blood cell count of $9.2 \times 10^3/\mu\text{L}$, with a differential of polys/bands 75%, lymphocytes 10%, monocytes 11%, and eosinophils 4%. Her CD4 count was low at 56 cells/mm³ (reference range, 500–1600). Imaging studies revealed a large abdominal mass and splenomegaly worrisome for an underlying lymphoproliferative disorder. A bone marrow biopsy was normocellular but revealed small noncaseating granulomas (*Figure 1a*). An acid-fast stain was negative. Because a lymphoproliferative disorder was still in the differential diagnosis, a biopsy of the abdominal mass was done. The mass consisted of numerous spindle cells in a background of fibrosis (*Figure 1b*, *Figure 1c*). The initial impression was that of an inflammatory pseudotumor. There was no evidence of a lymphoproliferative process. Because of the patient's history of HIV, an acid-fast stain for mycobacteria and a Gomori silver stain for fungal organisms were done. The acid-fast stain revealed numerous positive bacilli (*Figure 1d*). The fungal stain was negative. Cultures from the mass were subsequently positive for mycobacterium avian complex.

DISCUSSION

Mycobacterial spindle cell pseudotumor (MSP) is a form of granulomatous inflammation in response to infection by a mycobacterial species in which histiocytes exhibit a spindle cell morphology.^{1–6} Although first identified and described over 3 decades ago, most knowledge about this entity comes from case reports.^{1–6} These benign lesions are rare and most commonly found in the lymph nodes, skin, spleen, or bone marrow of immunocompromised patients. The histopathologic diagnosis provides challenges due to the rare incidence and relatively bland histology. Granulomas may not be very well defined. The differential diagnosis is broad and includes myogenic or neural proliferations, Kaposi's sarcoma, spindle cell melanomas, neuroendocrine tumors, inflammatory myofibroblastic tumor, and inflammatory pseudotumor.⁵ One of the major features of this entity is that it almost always occurs in immunocompromised individuals, so an infectious process must always be considered. The bone marrow in our case contained granulomas, but the acid-fast stain was negative for organisms. Acid-fast stains were done on the abdominal tissue in our case, even though granulomas were not evident, because of the patient's history of HIV and the need to rule out an infectious process. The tissue mass, which was probably a lymph node, was heavily infiltrated with acid-fast organisms. Mycobacterium avian complex is the

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Figure 1. (a) Bone marrow with granulomas (arrows), hematoxylin and eosin $\times 400$. (b) Spindle cell pseudotumor, hematoxylin and eosin $\times 100$. (c) Spindle cell pseudotumor, hematoxylin and eosin $\times 400$. (d) Acid-fast bacilli stain.

most frequent organism isolated (as was in our case), followed by *Mycobacterium tuberculosis* complex.⁶

It is important for pathologists to be aware of this entity, especially in immunocompromised individuals, and obtain appropriate stains and cultures. This is a nonneoplastic treatable condition, and antimycobacterial therapy is significantly associated with a successful outcome.^{6,7}

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