Short reports

Transcarinal needle aspiration in the diagnosis of mediastinal adenitis in a patient infected with the human immunodeficiency virus

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Abstract

Tuberculous mediastinal lymphadenopathy in a patient infected with human immunodeficiency virus (HIV) was diagnosed by means of transcarinal needle aspiration via a fiberoptic bronchoscope.

Extrapulmonary and disseminated forms of tuberculosis are frequent among HIV positive patients.¹⁻³ Diagnosis of mediastinal adenitis is particularly difficult, given the inaccessibility of this region, and usually requires a surgical approach. We report the diagnosis of tuberculous infection of mediastinal glands by the use of a flexible transbronchial needle through a fiberoptic bronchoscope.

Case report

A 37 year old man, with a one month history

of cough, fever, reduced appetite and weight loss, was admitted to hospital. He was a 20 pack year smoker and had a history of parenteral drug abuse. Hepatitis was diagnosed at the age of 30. On examination the patient was pale and thin, with soft, white patches on the tonsils and tongue. His temperature was 38°C, pulse rate 120 beats/min, respiratory rate 25/min, and blood pressure 100/60 mm Hg. He had mild expiratory wheezes in both lungs but no crackles. No lymphadenopathy was present and the rest of the clinical examination showed nothing abnormal.

Abnormal laboratory results included normocytic anaemia (haemoglobin concentration 11.1 g/dl) and a white blood cell count of $10.1 \times 10^9/l$ (86% neutrophils, 4% band forms, 6% lymphocytes, and 4% monocytes). The erythrocyte sedimentation rate was 65 mm in the first hour. The Mantoux test (PPD, 5 TU) produced a 10 mm induration. A chest radiograph showed mediastinal widening with a normal lung appearance. Computed tomography of the thorax showed multiple enlarged mediastinal lymph nodes, up to 2 cm in diameter (figure). Microscopic examination of sputum specimens stained by the Ziehl-Neelsen and fluorescence methods showed no acid fast bacilli. Specimens taken from an oropharyngeal exudate disclosed *Candida albicans*. A test for antibodies to the human immunodeficiency virus gave a positive result.

On the third day in hospital fiberoptic bronchoscopy showed external compression of the carina and subcarinal widening. No endobronchial lesion was seen. Transbronchial aspiration with a 22 gauge type IA

Contrast enhanced computed tomogram of the chest, showing enlargement of left and right hilar lymph nodes and posterior subcarinal lymph nodes.

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transbronchial needle (Mill-Rose Company, Mentor, Ohio) was performed at the anterior and posterior aspects of the main carina.⁴ Thirty millilitres of purulent fluid was aspirated. Cytological examination gave negative results. Ziehl-Neelsen staining showed many acid fast bacilli. No complications occurred after the procedure. The patient started antituberculous treatment, with slow resolution of his symptoms. Specimen culture in Lowenstein-Jensen media grew *Mycobacterium tuberculosis*.

Discussion

The differential diagnosis of mediastinal masses with no abnormality in the lung is an important clinical problem. One of the most important causes of mediastinal widening on a chest radiograph is lymph node enlargement, usually due to tumour or infection. Lymphadenopathy is one of the commonest forms of extrapulmonary tuberculosis, especially in children and young adults, though enlargement of mediastinal lymph nodes is an unusual presentation of tuberculosis in non-immunosuppressed white adults.⁵

Patients infected with HIV have clinical and radiological patterns that differ from those of reactive tuberculosis in non-HIV patients in the following respects: (1) hilar or mediastinal adenopathy (or both) is common and is probably part of a generalised lymphatic tuberculosis; (2) pulmonary infiltrates occur with about equal frequency in the upper and lower lung fields and do not cavitate or heal with scars; (3) disseminated disease is reported in a high percentage of HIV positive patients. These differences between HIV and non-HIV

patients are almost certainly related to differences in immunity.¹⁻³ Abnormalities in the mediastinum are traditionally investigated by mediastinoscopy, anterior mediastinotomy, or thoracotomy. Wang developed transbronchial needle aspiration via a fiberoptic bronchoscope in 1983, to overcome the need for more invasive procedures in the diagnosis of cancer.⁶ The procedure is useful for sampling paratracheal, subcarinal, and hilar regions and it also has therapeutic potential.⁶⁻⁸ We are unaware of any previous report in which transbronchial needle aspiration has been used in the diagnosis of infection in the mediastinum.⁹ With this technique we obtained specimens from our patient that facilitated rapid, safe, and accurate diagnosis of tuberculosis, thereby avoiding more aggressive procedures and a risk of the transmission of HIV to the thoracic surgeon.

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