



FIGURE 1. Selective intercostal artery injection shows rapid filling of anomalous venous structures.

intercostal arteriography showed a congenital arteriovenous malformation arising from the seventh right intercostal artery and feeding into an anomalous tangle of venous structures in the chest wall (Fig 1). Right heart catheterization showed no pulmonary vascular communication.

While the natural history of this condition is conjectural, it is postulated that periods of rapid enlargement of the malformation may disrupt normal continuity between the parietal and visceral pleura of the lung, causing pneumothorax. Other possible complications include rupture of the malformation and precipitous bleeding. Magnetic resonance imaging studies of this region obtained periodically during a two-year period disclosed no enlargement in the vascular structure.

Vascular malformations in the chest wall are extremely uncommon. Their presence should be sought by careful auscultation if repeated pneumothoraces are documented in a young patient without detectable lung or pleural abnormalities.

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## Nocardiosis Mimicking Pulmonary Tuberculosis in Ugandan AIDS Patients

To the Editor:

Nocardiosis is an acute or, more commonly, chronic disease characterized by suppuration and due to one of the members of a genus of aerobic actinomycetes, *Nocardia*, with *N asteroides* being responsible for most human disease. Pulmonary involvement and dissemination to the brain and other sites are common, and nocardiosis is often associated with preexisting illness. Recently,

nocardiosis has been reported in association with the acquired immunodeficiency syndrome (AIDS).<sup>1,2</sup> We have observed two cases diagnosed at postmortem examination in patients dying of AIDS in Kampala, Uganda. In both cases, appropriate therapy was not given because an erroneous diagnosis of tuberculosis had been made.

A previously healthy 38-year-old Ugandan policeman was hospitalized with complaints of productive cough, hemoptysis, fever, chest pain, and progressive loss of weight. Physical evaluation revealed signs of right lung consolidation with pleural effusion. In addition, lesions consistent with Kaposi's sarcoma of the skin and palate were noted. The sputum was negative for acid alcohol-fast bacilli by both Ziehl-Neelsen and fluorescence staining. Chest x-rays were not available. The enzyme-linked immunosorbent assay for human immunodeficiency virus (HIV) was positive. A clinical diagnosis of pulmonary tuberculosis with HIV infection was made, and treatment was started. Despite supportive therapy, the patient died 26 days after admission. Autopsy revealed widespread cutaneous and visceral Kaposi's sarcoma and severe candidiasis in the oropharynx. Both lungs showed areas of consolidation, which on sectioning revealed confluent areas of caseous necrosis. On microscopy, there were extensive areas of necrosis surrounded by polymorphonuclear leukocytes, scanty mononuclear cells, and fibrosis peripherally. Silver and modified acid-fast strains showed filamentous organisms consistent with nocardia.

A 41-year-old man, previously in good health, was admitted complaining of productive cough and chest pain associated with progressive loss of weight over a three-month period. On examination, wasting was noted, but the respiratory system findings were normal. Sputum was negative for acid alcohol-fast bacilli. The HIV serologic findings were positive. Pulmonary tuberculosis with AIDS was diagnosed on clinical grounds, and treatment was started. The patient's condition deteriorated, and he died five days after admission. Autopsy showed consolidation of both lungs. Histologic study with silver stains revealed filaments consistent with Nocardia. Homogenates stained with the modified Ziehl-Neelsen method showed acid alcohol-fast branched filaments. Cultures grew *N asteroides*.

These two cases of nocardiosis in autopsied patients with AIDS emphasize that nocardiosis is an important and potentially curable complication of AIDS that must be considered even in Africa, where tuberculosis is the most common major respiratory complication of AIDS. The clinical presentations of our patients are similar to those reported by Bailey et al<sup>3</sup> from Zimbabwe, although their cases were not associated with HIV infection.

In conclusion, we have observed pulmonary nocardiosis mimicking tuberculosis in HIV-infected patients in Uganda. We caution that this potentially treatable disease may be mistaken for tuberculosis in AIDS patients in tropical Africa.

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