Thorax 1988;**43**:486–487

Pulmonary pseudotumour due to *Corynebacterium equi* in a patient with the acquired immunodeficiency syndrome

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ABSTRACT A case of inflammatory pseudotumour of the lung in a patient with the acquired immunodeficiency syndrome due to infection by *Corynebacterium equi* is described.

Patients with the acquired immunodeficiency syndrome (AIDS) may develop a wide range of opportunist infections as a consequence of altered host defences. The course of AIDS is also complicated by malignant diseases, including aggressive forms of Hodgkin's disease, non-Hodgkin's lymphoma, and Kaposi's sarcoma.[1-3] The wide range of diseases seen and their often unusual presentations may lead to diagnostic difficulties.

We recently observed a case of inflammatory pseudotumour of the lung resulting from infection by *Corynebacterium equi*, which posed considerable diagnostic difficulties before histological examination.

Case report

A 30 year old Haitian woman was admitted to the Hôpital Saint Louis, Paris, with weakness, fever, and an 18 kg weight loss over the preceding 12 months. Physical examination showed an ill looking, thin black woman with obvious respiratory difficulties and an oral temperature of 39°C. There was no palpable adenopathy.

The white blood cell count was $6{\cdot}0 \times 10^9$ cells/l with a differential count of 72% polymorphonuclear cells, 2% eosinophils, and 16% lymphocytes. Anti-human immunodeficiency virus (HIV) antibodies were detected by the ELISA technique and confirmed by Western blot. Chest radiography showed a solid mass in the superior lobe of the left lung (fig 1). Computed tomography confirmed the presence of a solid mass in the superior lobe, without evidence of cavitation. Bronchoscopy, performed elsewhere, showed a yellow tan mass partially obstructing the segmental bronchus. Biopsy specimens obtained at bronchoscopy showed a non-specific inflammatory infiltrate consisting predominantly of histiocytes. Cultures of sputum, bronchial aspirate, bronchoalveolar lavage fluid, and transparietal puncture tissue produced a slow growth of *Corynebacterium*

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Accepted 16 March 1988

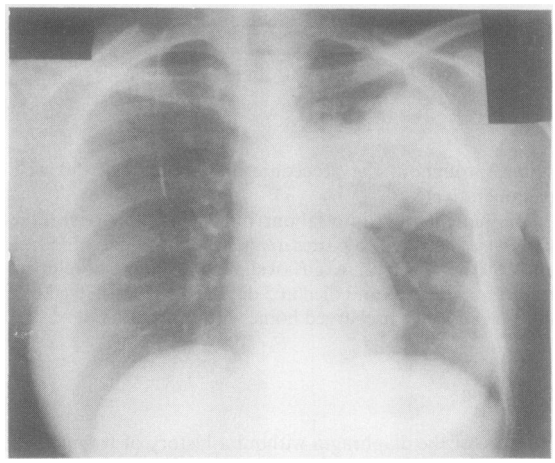

Fig 1 *Chest radiograph showing an opaque mass lesion in the left lung. The shadow is essentially solid, without apparent cavitation. The surrounding lung fields are relatively clear.*

sp, which was considered to be a contaminant. Treatment for possible mycobacterial infection with erythromycin and rifampicin was instituted, though the result of the Mantoux test was negative; no improvement occurred. Thoracotomy was proposed to established a definitive diagnosis.

At surgery a large tumour occupied all but a small portion of the left upper lobe, which was removed. The tumour appeared as a circumscribed white tan mass with a uniform fleshy consistency destroying the pulmonary architecture. The pleura was not affected. Small nodules, macroscopically similar to the large mass, were present in the narrow rim of unaffected lung tissue. The appearance suggested a haematological malignancy.

Histological preparations showed replacement of the pulmonary parenchyma by sheets of closely approximated histiocytes with faintly acidophilic cytoplasm and regular eccentric nuclei (fig 2). Occasional plasma cells were present. In some areas dense fibrous bands, rich in reticulin and containing blood vessels, were noted. Rare haemosiderin deposits were apparent. Gram methenamine silver (GMS), periodic-acid Schiff (PAS), and Brown-Hopp's stains all demonstrated numerous small rod like organism (fig 2, inset).

Immunocytochemical examination showed polyclonal intracytoplasmic immunoglobulins in the plasma cells. Tissue cultures processed by routine methods produced a growth of *Corynebacterium equi*.

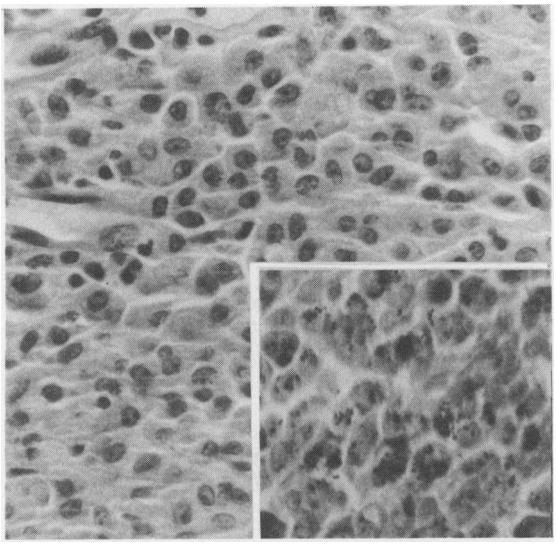

Fig 2 *Histological sections of lung. Note monotonous sheets of histiocytes with faintly granular cytoplasm. Occasional plasma cells are present. The histiocytes are closely opposed to a capillary (Haematoxylin and eosin.) Inset: Small curved rod like intracytoplasmic organisms morphologically consistent with diphtheroids. Cultures were subsequently postive for* Corynebacterium equi. *(Grocott stain.)*

Samples of the material were submitted to the US Center for Disease Control, Atlanta, Georgia, for confirmation of the diagnosis. On the chest radiograph shadowing persisted in the left lower lobe and treatment was started with erythromycin and vancomycin, with resolution of symptoms and complete clearing of the lesions within 21 days. The patient is currently alive and in stable health 10 months after surgery with no recurrence of *C equi* infection or other complications of the underlying AIDS.

Discussion

Corynebacterium equi is infrequently encountered as a human pathogen. It has been reported in immunocompromised patients after renal transplantation, with haematological malignancies, and recently in patients with AIDS.[4,5] Typically, the organism produces a suppurative pneumonia with abcess formation.[5,6] The presentation in our case as a well circumscribed inflammatory pseudotumour is unusual.

Inflammatory pseudotumour of the lung[7] may appear spontaneously or as a remote sequel to chest infection. As is frequent with inflammatory pseudotumours, the endoscopic biopsy findings of non-specific chronic inflammation were of limited use in establishing a definitive diagnosis of inflammation, as the possibility of an adjacent malignant tumour could not be excluded. Macroscopic examination of the surgical specimen strongly suggested lymphoma, but histological examination established the inflammatory nature of the lesion.

Inflammatory pseudotumour must be distinguished from various other lesions, both benign and malignant, especially in the context of AIDS. Organising pneumonias are less well circumscribed and show preservation of the pulmonary architecture. In the non-immunosupressed patient granulomatous disease may be readily distinguished by the presence of foreign body giant cells and necrosis, but in patients with AIDS granulomas may be histologically unusual and lack these features.

Non-Hodgkin's lymphoma[2] in patients with AIDS are typically high grade B cell neoplasms with monomorphic populations of cytologically malignant cells that are immunohistochemically monotypic. Pulmonary Hodgkin's disease would be distinguished by Reed-Sternberg cells against a background of small, round lymphocytes, eosinophils, and occasional plasma cells. The diagnosis of carcinoma does not in general pose problems.

Human immunodeficiency virus has been found in mononuclear phagocytes cultured from the lungs of patients with AIDS,[8] and in the lymphocytes present in AIDS associated lymphocytic interstitial pneumonitis.[9] In addition, defective monocyte function has been detected in both AIDS and the AIDS related complex.[10] Conceivably the unusual presentation of this patient's infection as a pseudotumour mass relates to these abnormalities.

We wish to thank Dr G Paul, Service de Bacteriologie, Hôpital Cochin, Paris, for identifying the *C equi* and Dr R E Weaver, Special Respiratory Pathogens Branch, Center for Disease Control, Atlanta, Georgia, for confirmation of bacteriological results. GAB is supported by a grant from the Fondation de France.

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