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Endobronchial tuberculosis masquerading as foreign body aspiration

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Abstract
Endobronchial tuberculosis is a rare manifestation of pulmonary mycobacterial disease. We present a case in which an endobronchial tuberculous granuloma resulted in acute respiratory distress simulating foreign body aspiration.

Key words: Bronchoscopy; Tuberculosis; Granuloma, respiratory tract; Foreign body

Introduction

Since the introduction of modern chemotherapeutic agents endobronchial tuberculosis has become a rare manifestation of mycobacterial infection, more commonly reported in the elderly population (Ip *et al.*, 1986). When compared with parenchymatous lung tuberculosis the endobronchial infection is less widely appreciated as an entity by those not directly involved in the management of intra-thoracic tuberculosis. We present a case which illustrates the need for the ENT surgeon to be aware of the endobronchial form of the disease.

Case report

A five-year-old boy of Asian origin presented with a 24-hour history of repeated coughing fits which appeared to begin shortly after eating a piece of meat. Six months earlier he had returned from the Indian subcontinent with a prolonged fever, and had been found to have pulmonary tuberculosis. Antituberculous chemotherapy consisting of rifampicin, isoniazid and pyrazinamide had been commenced, and he had been kept under regular review.

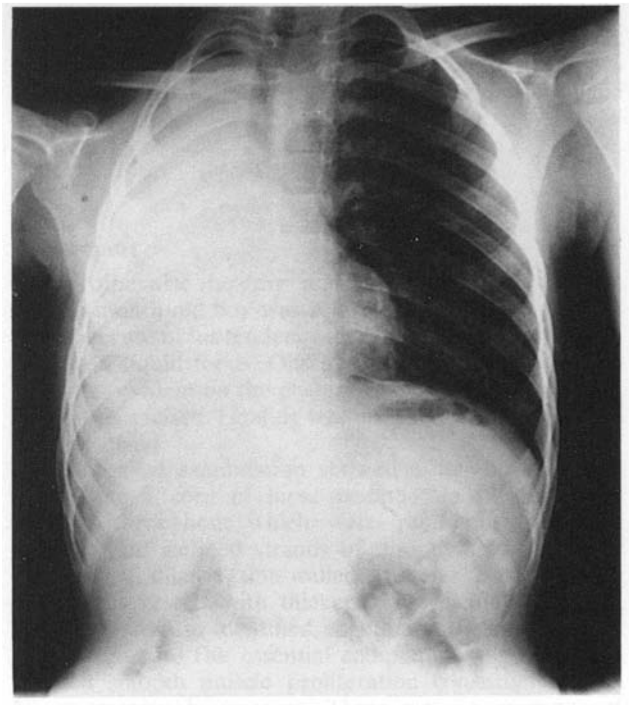

FIG. 1
Chest X-ray on presentation showing a uniform opacification of the right hemithorax with mediastinal shift to the right.

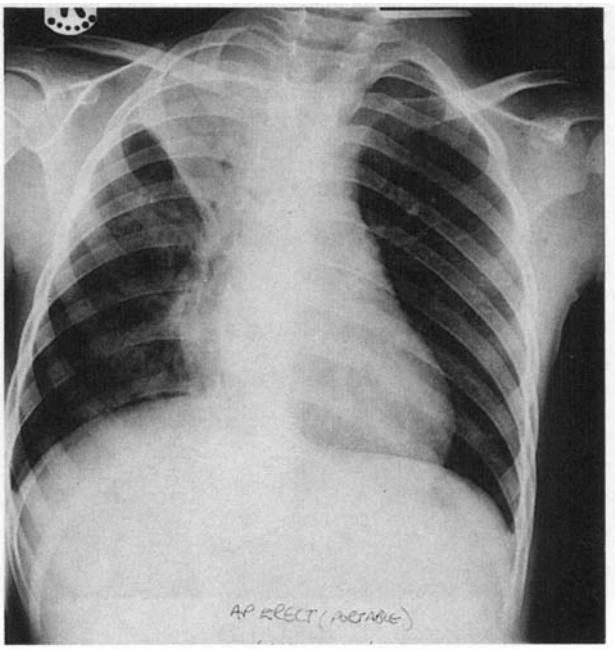

FIG. 2
Appearance immediately after bronchoscopic treatment.

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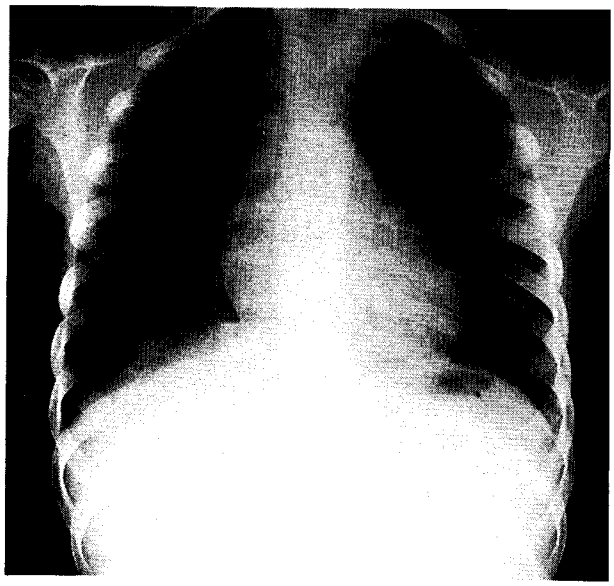

FIG. 3
Chest X-ray at four months.

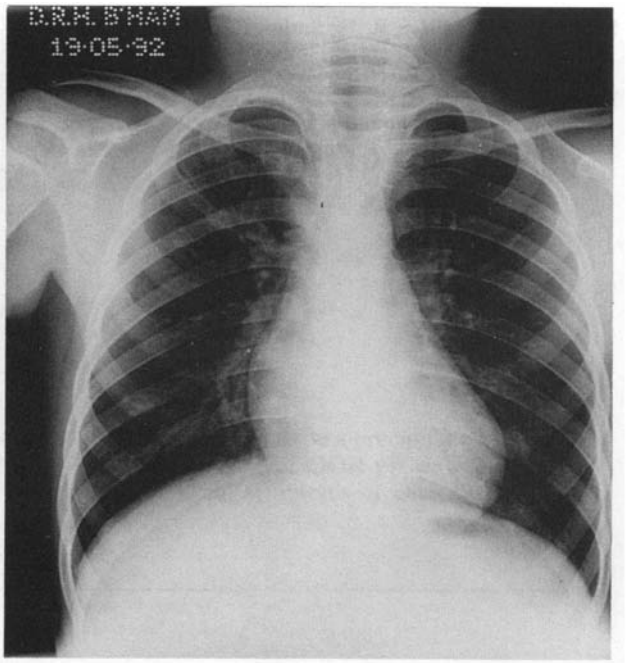

FIG. 4
Chest X-ray at eight months showing minor upper lobe scarring only.

There were no apparent problems with treatment compliance.

On this occasion he was found to be breathless at rest, with a pyrexia of 38.5°C. His trachea was deviated to the right, with signs of consolidation and collapse of the right lung. A chest X-ray confirmed this diagnosis (Figure 1), and an urgent bronchoscopy was performed for what was felt to be an inhaled foreign body.

A large fleshy object was found to be occluding the right main bronchus from the carina to the beginning of the right upper lobe. This was removed piecemeal to reveal extensive ulceration of the bronchial mucosa, and a small amount of pus.

The mass was sent for histological examination and the pus for microscopy. Numerous acid- and alcohol-fast bacilli were identified. The 'foreign body' was found to be a mass of epithelioid granulomata with giant cells.

Clinically the patient improved rapidly and was discharged four days later. Radiographic resolution took a further eight months (Figures 2 to 4). The child was well at follow-up 12 months later.

Discussion

Endobronchial tuberculosis (ETB) is thought to arise from several different mechanisms; extension of parenchymatous disease, direct infection, or rupture of peri-hilar nodes into the bronchial lumen (Smith *et al.*, 1987).

The presentation of ETB is usually similar to that of its parenchymatous counterpart but several cases have been described where the presenting features have been those of a bronchial neoplasm (Mathews *et al.*, 1984; Pitlik *et al.*, 1984). There are two previous reports of children with ETB presenting with obstructive emphysema presumed to be caused by a foreign body (Caglayan *et al.*, 1989; Wood *et al.*, 1990), but neither presented as acutely as the one we describe here. ETB appears to be more common in patients with prolonged undiagnosed or inadequately treated tuberculosis. Although there was no evidence of poor compliance, this remains the most likely reason for the development of ETB in our patient.

Salkin *et al.*, (1943) studied the course of ETB in 120 untreated patients, and described progression from ulceration to bronchial stenosis over a period of six months. Although measures to prevent bronchostenosis have been unsuccessful (Nemir *et al.*, 1963; Ip *et al.*, 1986), it appears from the literature that early diagnosis and treatment may prevent the transition from inflammation to stenosis (Mathews *et al.*, 1984; Pitlik *et al.*, 1984).

It is possible that in the future ETB may present more frequently in those with acquired immunodeficiency syndrome, who often exhibit unusual manifestations of tuberculous infection (Duncanson *et al.*, 1986; Maguire *et al.*, 1987). We would urge all involved in the bronchoscopic treatment of children with potential foreign bodies to keep the possibility of tuberculosis in mind.

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