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CASE FOR DIAGNOSIS

Skin lesions and an intrathoracic mass

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Case report

A 33 year old man was screened for pulmonary tuberculosis after contact with a nephew with pulmonary tuberculosis. The chest X-ray was abnormal and he was referred to the out-patient department.

Despite worsening of his general condition during the previous 4–5 months, he still worked for 7 days a week in his restaurant. He was tired, had lost 6 kg in weight, and had night sweats. He complained of a vague unpleasant feeling, with some pain in the retrosternal area, but without dyspnoea. There were no factors provoking this pain. His cough had been productive for 2 yrs. He smoked 50 cigarettes daily, with 40 pack-years exposure.

One month before admission, he had noticed two painful skin lesions on his right forearm and the pretibial region of the left leg. The lesions were red and swollen and subsequently yellow pus exuded from the centre of the lesions. The maximum diameter was 6–8 cm.

The patient's further medical history revealed gonococcal infections at the age of 23 yrs. He denied promiscuous heterosexual and homosexual contacts during the previous 5 yrs. Ten years previously, he had been given BCG vaccination. He took 4–6 alcoholic beverages daily. His brother had been treated for Hodgkin's disease.

On physical examination, the patient appeared well; weight 54 kg; height 1.60 m; temperature 37°C; pulse 72 beats·min^{-1}; respiratory rate 18 breaths·min^{-1}; blood pressure 110/70 mmHg. The jugular venous pressure was not elevated. There was no lymphadenopathy, except for the presence of two painless, mobile, elastic small lymph nodes in the left groin. On the right forearm and proximal to the left medial ankle erythematous skin lesions were seen, which resembled abscesses. There were no signs of lymphangitis. Inspection of the mouth revealed no abnormalities; there was a reasonable condition of dentition and paradontium. There was no dullness over the lungs and breath sounds were normal. Auscultation of the heart was normal. There was no hepatosplenomegaly and no palpable abdominal mass. No peripheral oedema, clubbing or cyanosis was found. Neurological examination was normal.

Laboratory examination revealed erythrocyte sedimentation rate (ESR) 84 mm·h^{-1}; haemoglobin 7.7 mmol·l^{-1}; haematocrit 0.39; white cell count 17.4×10^{9}·l^{-1} (with 80% neutrophils, 13% lymphocytes, 4% monocytes, 1% basophils and 1% eosinophils); platelets 491×10^{9}·l^{-1}. Serum electrolytes, renal and liver function tests were normal. Alpha$_1$-foetoprotein and beta human choriogonadotrophin were normal. The electrocardiogram was normal.

The posteroanterior (PA) and lateral chest roentgenograms are shown in figure 1. Bronchoscopy only revealed narrowing of the apical branch of the right upper lobe. Cytological and bacteriological investigations of brushes and lavage fluid were normal. There were no acid-fast bacilli found.

A mediastinoscopy was performed, biopsies showed normal lymph node tissue. Subsequently a parasternal mediastinotomy was performed; a photomicrograph from the biopsy is shown in figure 2.

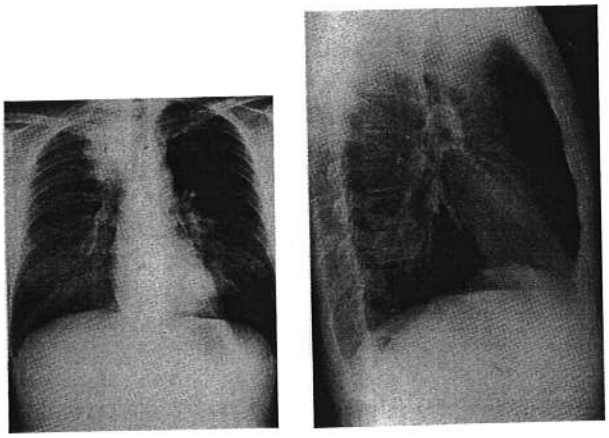

Fig. 1. – Posteroanterior (PA) and lateral chest roentgenogram.

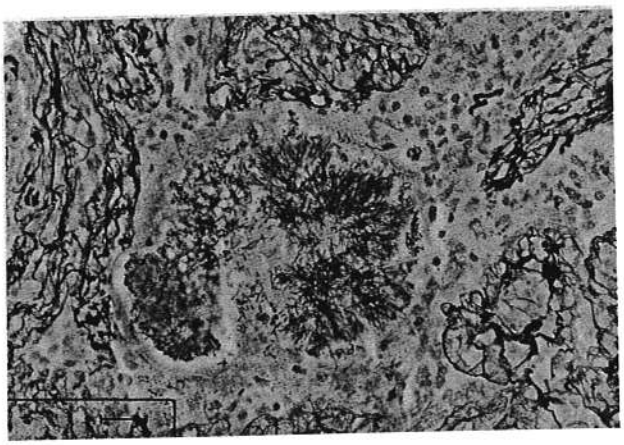

Fig. 2. – Photomicrograph of a biopsy from the parasternal mediastinotomy. Grocott staining. Bar=2 μm.

BEFORE TURNING TO THE NEXT PAGE FOR DIAGNOSIS: INTERPRET THE CHEST ROENTGENOGRAMS (fig. 1) AND THE MICROPHOTOGRAPH OF THE BIOPSY (fig. 2).

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The PA and lateral chest roentgenograms show a right paratracheal mass and an infiltrate in the left lower lobe (fig. 1). Computed tomography of the thorax revealed a mass in the right upper lobe, possibly continuous with the mediastinum. There were no enlarged lymph nodes in the mediastinum. In the left lower lobe, infiltrative abnormalities were seen.

The biopsy from the parasternal mediastotomy revealed destroyed alveoli, with an acute and chronic lymphorecticular infiltrate with histiocytes. Sporadic colonies of actinomyces were observed (fig. 2). These are typical of actinomycosis [1–3]. There were no signs of malignancy in the biopsy.

Diagnosis: Actinomycosis

Clinical course

The patient was treated with penicillin G, $6 \times 2 \cdot 10^6$ U·day^{-1} *i.v.* for 4 weeks in hospital. Following an allergic reaction, this was followed by oral erythromycin for 4 weeks. The chest X-ray improved and the ESR became normal. The skin lesions also disappeared.

Discussion

The presentation of this case of thoracic actinomycosis is typical of the disease. It may resemble tuberculosis or malignancy. Pain, cough and constitutional symptoms are often reported. The skin lesions represent haematological dissemination; this occurs frequently in thoracic actinomycosis [4–6]. Anaerobic culture and/or microscopic examination of the pus would also have given the diagnosis [1]. However, thoracic actinomycosis may occur as a secondary infection in malignancies [2, 3]. Therefore, a biopsy of the thoracic mass was still indicated.

Thoracic actinomycosis may occur in previously healthy people, but in a number of patients pre-existing pulmonary diseases seem to contribute to the pathogenesis [2, 3]. The causative agent, *A. israelii*, is found in normal flora of the mouth, gastric aspirates and in bronchial secretions. Factors that determine pathogenicity of this anaerobic bacterium are not elucidated [1]. It is probable that poor dental condition, with damage to the oral mucosa, predisposes to colonization and subsequent aspiration of the micro-organism [1, 2]. Actinomycosis is a rare infection and the clinical diagnosis is seldom made; intrathoracic location is reported in 18–27% in two large series on human actinomycosis [2, 3]. Roentgenological manifestations include intrapulmonary or mediastinal masses, infiltrative lesions, cavities, pleural and bone lesions [7].

With adequate antibiotic therapy - prolonged course of penicillin - the prognosis of actinomycosis is excellent, and recurrences are rare [1–3].

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ABSTRACT: We describe a case of thoracic actinomycosis in a previously healthy man. The clinical features were a paramediastinal mass with skin lesions due to haematogenic dissemination. After parasternal mediastomy, the diagnosis was made. After treatment with penicillin, there was complete recovery.

Keywords: Actinomycosis, intrathoracic mass.