Endobronchial actinomycosis: is a repeat bronchoscopy after treatment necessary?

Introduction

Actinomycosis is a chronic granulomatous infection that becomes suppurative resulting in abscesses and draining sinuses. The anatomical distribution is about 60% cervicofacial, 15% thoracic, 20% abdominal, and 5% of other types (Tastepe et al, 1998). Endobronchial actinomycosis is rare and has been reported in association with foreign body aspiration (Chouabe et al, 2002). This article reports a case of endobronchial actinomycosis which failed to respond to appropriate antibiotic therapy.

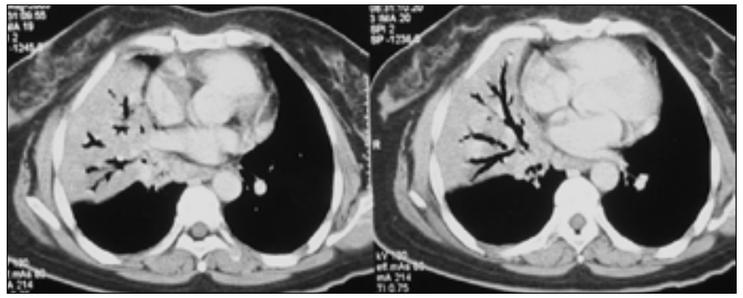

Figure 1. Contrast enhanced computed tomogram of thorax showing consolidation in the right middle lobe extending to the periphery of the lung with an air-bronchogram.

Discussion

Actinomycosis is caused by anaerobic or microaerophilic Gram-positive bacilli belonging to the genus *Actinomyces*. Its natural habitat, with the exception of *A. humiferus*, is the mucous membranes of oropharynx, skin, gastrointestinal tract, and the female genital tract of humans (Tastepe et al, 1998). The pathogenicity of *Actinomyces* spp. is low and a pre-existing tissue injury is necessary for the onset of disease. The portal of entry of the *Actinomyces* spp. in thoracic actinomycosis is usually secondary to aspiration of oropharyngeal or gastrointestinal secretions. The second biopsy specimen in this case showed necrotic vegetative matter which could have been part of the aspirated foreign body causing injury and acted as the predisposing factor for the infection.

The largest series of endobronchial actinomycosis associated with foreign body was reported by Chouabe et al (2002). They reviewed 11 cases and found the most common presentation was cough (63%), followed by haemoptysis (36%) and recurrent pneumonia (27%). Most of the patients were debilitated as a result of diabetes mellitus (27%), neoplasm (18%), poor dental hygiene (36%) and mental retardation (9%) without any history of foreign body aspiration. In this study, nine out of 11 patients had involvement of the right lung. Bronchoscopy revealed a mass at the right lower bronchus in five and another four at the right main bronchus. One each had a left upper and left lower bronchus mass. A few cases of endobronchial actinomycosis in acquired immunodeficiency syndrome (AIDS) patients (Chaudhry and Greenspan, 2000) and in association with bronchogenic carcinoma (Dujneungkunakorn et al, 1999) and endobronchial lipoma (Ariel et al, 1991) have been reported.

Bronchoscopy is very useful in diagnosing endobronchial actinomycosis. The commonest endoscopic finding is an endoluminal mass which is not easy to differentiate macroscopically from a tumour. As with the current patient, a foreign body was not detected in 55% of cases on initial bronchoscopy (Chouabe et al, 2002), as a result of subtotal bronchial occlusion by the endoluminal mass. After 7 months of antibiotic therapy, the reduction in the size of the endoluminal mass allowed visualization of the 'tissue' which lay across the bifurcation of the middle lobe bronchus and which was removed with biopsy forceps. Therefore, a repeat bronchoscopy after treatment is essential to exclude foreign bodies and a concomitant tumour in endobronchial actinomycosis if the initial bronchoscopy does not reveal such abnormalities. BJHM

Case Report

A 51-year-old Chinese woman without any significant past medical history was admitted in October 2003 for cough of 18 months' duration. There was minimal clear expectoration and no haemoptysis. She denied any shortness of breath, anorexia and weight loss. There were no symptoms of rhinitis, gastro-oesophageal reflux or choking. She was afebrile with good dental hygiene. There were fine crepitations and localized rhonchi over the right lung base. Despite short courses of antibiotics from her general practitioner there was no improvement in her symptoms.

The initial chest radiograph showed opacity in the right middle lobe with a subtle air-bronchogram. Blood investigations revealed an erythrocyte sedimentation rate of 113 mm/hr, and fasting and random blood glucose levels of 10.4 mmol/litre and 13.4 mmol/litre respectively. The full blood count, renal and liver function tests were within normal limits. Contrast enhanced chest computed tomogram (*Figure 1*) revealed a right middle lobe consolidation with air-bronchogram. A few pre-tracheal and subcarinal lymph nodes of less than 1 cm in diameter were present. Bronchoscopy showed nodular lesions causing subtotal occlusion of the middle lobe bronchus. Biopsy of these lesions revealed filamentous-like bacterial colonies which were Gram stain positive and modified Ziehl–Neelson stain negative with a background of acute and chronic inflammation consistent with actinomycosis. Bronchoalveolar lavage specimens were culture-negative. She was treated with intravenous benzylpenicillin 5 mega units 6-hourly for 1 month followed by oral penicillin V 1 g 6-hourly for 6 months.

She returned to the clinic with complete resolution of symptoms 7 months after the treatment and a follow-up chest radiograph showed near complete resolution the right middle lobe opacity. Repeat bronchoscopy still showed nodular lesions in the right main bronchus which appeared much smaller now. The bronchoscope could now be passed beyond the lesion and a piece of 'tissue' was seen at the bifurcation of the middle bronchus. The 'tissue' was grasped with a biopsy forceps. However, it dropped above the vocal cords and most likely was swallowed by the patient. A repeat biopsy of the nodule showed persistence of actinomycosis. In addition, necrotic vegetative matter was present. Oral penicillin at the same dose was continued. Three months later, a third bronchoscopy showed complete resolution.

Dr Soon Hin How *is Assistant Professor, Department of Internal Medicine, Kulliyyah of Medicine, International Islamic University Malaysia, PO Box 141, 27510, Kuantan, Pahang, Malaysia,* **Dr K Ramachandram** *is Head of Department of Pathology, Hospital Tengku Ampuan Afzan, Kuantan, Malaysia and* **Dr Azian Abd Aziz** *is Assistant Professor, Department of Internal Radiology, Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia*

Correspondence to: Dr SH How

Ariel I, Breuer R, Kamal NS, Ben-Dov I, Mogel P, Rosenmann E (1991) Endobronchial actinomycosis simulating bronchogenic carcinoma. *Chest* **99:** 493–5

Chaudhry SI, Greenspan JS (2000) Actinomycosis in HIV infection: a review of a rare complication. *Int J STD AIDS* **11**(6): 349–55

Chouabe S, Perdu D, Deslee G, Milosevic D, Marque E, Lebargy F (2002) Endobronchial actinomycosis associated with foreign body: four cases and a review of the literature. *Chest* **121**(6): 2069–72

Dujneungkunakorn T, Riantawan P, Tungsagunwattana S (1999) Pulmonary actinomycosis: a study of 16 cases from Central Chest Hospital. *J Med Assoc Thai* **82**(6): 531–5

Tastepe AI, Ulasan NG, Liman ST, Demircan S, Uzar A (1998) Thoracic actinomycosis. *Eur J Cardiothorac Surg* **14:** 578–83

The passing of George Best

Poor George. The most brilliant footballer of his generation, if not the most brilliant of all time, reduced to a yellowed, ventilated ghost photographed for the *News of the World*. Never let it be said this was prurience; the important 'message' was the dangers of alcoholism. The coincidence with 24-hour licensing was ironic. Listening to government ministers trying to argue that all day and all night drinking was a plank in their policy to reduce the toll of alcoholism had me almost believing that black is white. And since Best had already watched his mother die of alcoholism, and was fully aware that it was killing him, the net effects of his deathbed photograph are likely to be: sales of newspaper – increased; deaths from alcohol – unaffected.

There wasn't much medical confidentiality in his last couple of weeks. Reporters camped outside the Cromwell Hospital got frequent bulletins directly from his medical team, headed by the sepulchral Professor Roger Williams. The details were rather more than the average house officer is able to give about a patient, and we have to presume that he or his relatives had given consent for this. However much he battered his many female conquests, he clearly won over his doctors, who interspersed their prognostications with comments about how wonderfully engaging our Georgie was.

The Cromwell didn't charge Best for the £100 000 his treatment is said to have cost. One can only hope that the weeks of free advertising allow them to recoup it so that, unlike the NHS, they don't have to start laying off doctors and postponing operations into the next financial year in order to balance their books.

On Thursday 24 November, Professor Williams announced the end was nigh, but Best lasted another 24 hours. The BBC was caught on the hop. Best died actually during the headlines of *The World at One*, and there was much fluster because he was now the top story, if not the top cliché: 'The end of a long and valiant fight…'

The momentary pause by the newsreader that indicated 'something has happened' was followed by 'going over to our reporter on the pavement outside the Cromwell'. No doctor had yet appeared to tell the waiting hordes, who had learned the news in the same way as everyone else, from an Associated Press announcement. All the reporter could stutter, twice in different words, was that no one yet knew what had happened in those last few minutes of George Best's life. Did he imagine an armed avenger, on contract to the defenders around whom Best had danced in his years of football magic, had swooped in through a window and pulled out the ventilator plug? Or did he want a description of agonal breaths, rolling eyes and the onset of ventricular fibrillation? It was a crass piece of reporting, even more because it was an entirely expected event.

In that weekend's papers, there were few sections that did not include a story about Best. And largely it was as if the very public years of his decline were just a footnote. In a way, George Best, like Marilyn Monroe and James Dean, died young. BJHM

Dr Neville Goodman *is Consultant Anaesthetist at Southmead Hospital, Bristol*