Cavitating lung disease in ankylosing spondylitis may have other causes

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INTRODUCTION

Development of pulmonary fibrocystic disease in the upper lobes is a well-recognized extraskeletal manifestation of ankylosing spondylitis, but its pathogenesis is obscure (Davies, 1972; Rosenow et al, 1997).

Although pulmonary fibrosis may occur in association with other collagen vascular diseases, a predilection for the upper lobes is unique to ankylosing spondylitis. The fibrocystic disease is usually asymptomatic; if symptoms develop, they are usually a result of superimposed consolidation or infection by fungi or mycobacterium (Libshitz and Atkinson, 1978).

The pulmonary disease in ankylosing spondylitis has been reported to be complicated by intracavitary aspergillus infection (Leggat and De Kretsen, 1968; Crompton et al, 1974). In this report the authors describe a patient with ankylosing spondylitis and apical fibrocystic disease who developed right upper-lobe cavitating disease and was found to have caseating granuloma indicating active tuberculosis.

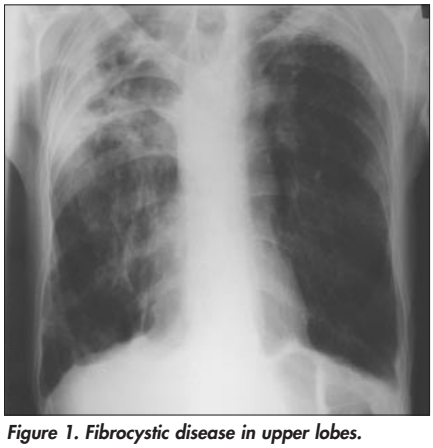


Figure 1. Fibrocystic disease in upper lobes.

DISCUSSION

Pulmonary fibrotic and cystic changes in patients with ankylosing spondylitis are now recognized as an integral part of the disease process. The reported incidence varies widely from approximately 1% to 14% or more (Appelrouth and Gottlieb, 1975; Chakera et al, 1975; Walson and Rohweddar, 1975), but the 1.3% figure reported by Rosenow et al (1977) is based on the largest series. The pleuropulmonary manifestations, from a review of 2080 patients with ankylosing spondylitis are:

- Fibrobullous disease (most common)
- Aspergillosis
- Pleural thickening (apical and non-apical)
- Pleural effusion
- Pneumothorax
- Corpulmonale.

The pulmonary changes generally followed the joint manifestations by several years. In 25 cases reviewed by

Figure 2. Thick-walled cavities especially on the right side.

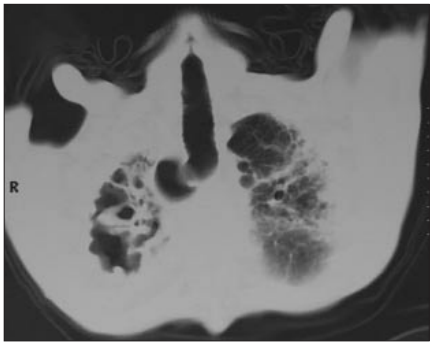
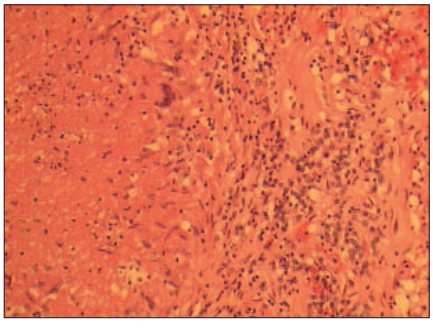


Figure 3. Caseating granuloma.



CASE REPORT

A 64-year-old man, who was an ex-miner with a 15-year history of ankylosing spondylitis was admitted with cough, purulent sputum and shortness of breath. He was a smoker with a 20 pack-year history. His lung function tests showed mainly restrictive disease but clinically there was an element of chronic obstructive pulmonary disease (COPD).

Physical examination showed him to be cachectic, afebrile, there was no finger-clubbing or lymphadenopathy. Chest examination showed reduced expansion and scattered wheezes. There was marked kyphoscoliosis of the dorsal spine and limited cervical spine movement. While his chest X-ray in 1994 was normal, subsequent chest X-rays showed progressive fibrocystic disease with extensive changes in the right side (*Figure 1*). His thoracic computed tomography scan showed bilateral fibrobullous disease and the right cavities were thick-walled with at least one fluid level, suggesting active disease, and there was marked pleural thickening over both apices (*Figure 2*).

Radiograph of the spine showed typical changes of ankylosing spondylitis with complete bony bridging of sacroiliac joints and ankylosing of the spine. Full blood count was normal; there was no evidence of eosinophilia. Tuberculin test was negative. Sputum smear and culture for acid-fast bacilli were negative. He was treated for exacerbation of COPD and his condition improved with a course of antibiotic and he was discharged home. He was readmitted a few months later with type 2 respiratory failure but, despite treatment, died. A post-mortem macroscopic examination showed severe bilateral apical pleural fibrous adhesions, severe emphysematous changes and marked scarring with fibrosis in the upper lobes and a 5 cm cavity in the right upper lobe. Histological examination showed caseating granuloma (*Figure 3*), indicating active tuberculosis but no acid-fast bacilli were seen.

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Davies (1972), the mean interval was 17 years with only two patients having pulmonary changes in less than 9 years.

Cruickshank (1960), in reviewing 420 fatal cases of ankylosing spondylitis, reported that 10% of the patients had pulmonary tuberculosis. Rosenow et al (1977) found only one case of pulmonary tuberculosis among 2080 patients with ankylosing spondylitis.

Radiographically, the upper-lobe disease in ankylosing spondylitis is similar to tuberculosis. Spurious reports of pulmonary tuberculosis in patients with ankylosing spondylitis may be a result of their similarity in radiographic appearances (Davies, 1972).

Here, post-mortem examination showed evidence of active pulmonary tuberculosis. Awareness of the pulmonary changes and associated superinfections should alert physicians to the complications of this disease and lead to correct diagnosis and therapy.

Cavitating disease in ankylosing spondylitis may have other causes than the disease itself. **HM**

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