Broncho-pleural fistula complicating rheumatoid lung disease

S. S. SHARMA

P. M. G. REYNOLDS
M.A., M.B., B.Chir., M.R.C.P.

Ballochmyle Hospital, Mauchline, Ayrshire

Summary
A 57-year-old man with severe rheumatoid arthritis complicated by lung disease developed a broncho-pleural fistula. Initially he had a symptomless pleural effusion but later a cavitated rheumatoid lung nodule ruptured giving rise to a broncho-pleural fistula which took 19 days to heal.

Introduction
The pleuro-pulmonary changes associated with rheumatoid arthritis are well known. A rare and more specific lesion is the subpleural or intraparenchymal rheumatoid nodule. The pulmonary nodules usually occur in patients with severe disease with subcutaneous nodules and high titres of rheumatoid factor. They may cavitate, and spontaneous pneumothorax may occur (Hindle and Yates, 1965; Portner and Gracie, 1966; Rubin, Gordon and Thelmo, 1967). This report documents a further interesting case.

Case report
A 57-year-old surface miner was diagnosed as having rheumatoid arthritis at the age of 43 years in 1966, with involvement of hands, wrists, knees and ankles leading to considerable deformity of the joints as well as subcutaneous nodules on the elbows and dorsum of the right hand.

FIG. 1. Tomogram showing cavitated thick-walled nodule in the mid zone of the right lung.
Investigations in 1968 showed haemoglobin 10·5 g/dl with normal indices, ESR 88 in the first hour. Rheumatoid factor positive with a titre of 1/80 but rising to 1/640 one month later. Chest X-ray showed a left pleural effusion.

The patient was treated with various anti-inflammatory drugs without any significant improvement. On prednisolone he continued to have acute exacerbations and remissions of his disease. In May 1978, although his arthritis was reasonably quiescent, a chest X-ray showed a small right-sided pleural effusion, and in December 1979 a cavitating thick walled lesion in the right mid-zone was seen, which was better visualized on tomography (Fig. 1). Sputum cytology for malignant cells and bacteriology, including culture for acid-fast bacilli and fungi, were negative and bronchoscopy showed no abnormality.

In March 1980, the patient presented with a 9-day history of persistent dyspnoea which had come on suddenly when he was climbing the stairs. There was no history of pain in the chest. Chest X-ray showed right-sided hydro-pneumothorax (Fig. 2). An intercostal tube was inserted with underwater seal but the lung failed to re-expand and so a second tube was inserted. Ultimately it took 19 days for his right lung to re-expand. The prednisolone was slowly tailed off. Further chest X-rays show a persistent cavitating nodule in the right mid zone with no further increase in size, and residual pleural reaction at the right base.

**Discussion**

Hurd (1979) and Walker and Wright (1968) described cavitation of rheumatoid lung nodules, which may be very difficult to differentiate from tuberculosis, mycotic or neoplastic lesions. These lesions were excluded in the present patient by negative sputum results, bronchoscopy and also by length of history which reduced the likelihood of bronchial carcinoma. Thoracotomy was not performed because of the patient’s reluctance and the strong clinical suspicion of a rheumatoid aetiology. It was considered probable that his cavitating rheumatoid nodule had ruptured giving a broncho-pleural fistula with a hydro-pneumothorax. It has been suggested that adrenocortical steroids (Bodley Scott, 1978) may predispose to spontaneous pneumothorax, and this could have been a further factor in this case.

**References**


