TUBERCULOUS BRONCHIECTASIS

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In recent years increasing emphasis has been placed on the bronchial changes in pulmonary tuberculosis. Much information has been obtained by the use of bronchoscopy and bronchography. Resection operations have demanded an exact knowledge of the state of the bronchial tree, and at the same time operation specimens have provided histological and morphological data.

The following two cases of tuberculous bronchiectasis are of interest in that tubercle bacilli were isolated in spite of minimal radiological changes; both patients have been observed for 3½ years following medical treatment.

Case 1.—J.W., a male bank clerk, aged 18 years. In December 1953 a routine Mass Miniature radiograph prior to National Service showed hazy opacities in the left lower lobe, with calcified glands at the left hilum. He was symptom free and there were no abnormal physical signs. Tomograms showed a calcified primary focus in the left lower lobe.

He was admitted to hospital for further investigation in December 1953. Bronchography demonstrated slight cylindrical bronchiectasis in the anterior basal segment of the left lower lobe, and reddening of the orifice of the left main bronchus was seen on bronchoscopy. Throughout his stay he was afebrile and the E.S.R. was repeatedly normal. Although there was no sputum, tubercle bacilli were cultured from two specimens of gastric washings.

In June 1954 intramuscular injections of streptomycin, 1 g. daily, were begun, together with 200 mg. of isoniazid daily. After three months' bed rest he was given a full course of sanatorium treatment, during which his weight increased by a stone. A total of 144 g. streptomycin was given and the course of chemotherapy ended in February 1955.

Cultures of gastric washings were negative for tubercle bacilli a month after starting streptomycin. Serial chest films showed that the opacities in the left lower lobe gradually cleared.

He returned to work in January 1955 and was symptom free and well when last seen in April 1957, when the chest film was normal apart from the calcified primary complex.

Case 2.—A.F., a female clerk, aged 23 years.

In November 1953 she developed left-sided pleuritic pain lasting for five months, during which time she remained at work. In March 1954 a chest X-ray showed abnormal shadowing in the left lower lobe.

By this time she was feeling ill and tired, and was unduly short of breath on exertion, probably due to an associated anxiety state. There was a slight cough with a trace of mucoid sputum and she had lost a little weight. There was no change on a further X-ray film, and sputum examinations ($\times 3$) were negative on smear and culture.

After two months' convalescence there was no improvement and, in July 1954, X-rays showed an extension of the shadowing in the left lower lobe; although six more specimens of sputum were negative on direct examination.

Later in July 1954, following admission to hospital for further investigation, the sputum cultures were returned positive for tubercle bacilli, fully sensitive to streptomycin, but moderately sensitive to isoniazid. Rales were now present for the first time over the left lower lobe, where there was slight reduction of breath sounds. The E.S.R. varied between 15 and 25 mm. (Wintrobe), and tomograms showed an area of collapse in the middle basal segment of the left lower lobe. A bronchogram demonstrated fusiform dilatation in the left mid-basal bronchus (Fig. 1).

Streptomycin, 1 g., and isoniazid, 200 mg., daily were given and, after four months' bed rest, treatment was continued at a sanatorium. At the end of this time she felt well, her weight had increased by 21 lb., and E.S.R. was repeatedly normal.

A total of 146 g. of streptomycin was given over eight months, and serial X-rays showed progressive reduction of the shadowing in the left lower lobe. Sputum cultures were negative in November and December 1954, and in December 1956.

She returned to work in July 1955 and was well when last seen in March 1957, apart from a very occasional cough. A further bronchogram in October 1956 showed no abnormality in the left lower lobe bronchi (Fig. 2), and there were no abnormal signs on clinical examination of her

FIG. 1.

chest. The chest film now shows minimal fibrosis in the left lower lobe as the only abnormality.

Discussion

Bronchiectasis is the commonest bronchographic abnormality seen in cases of pulmonary tuberculosis (Simon, 1953). Dormer *et al.* (1944) considered that mechanical factors which lead to its production in this disease are the same as in its production by other lung diseases.

In tuberculosis, bronchiectasis is rarely gross (Forgacs, 1955), and is more commonly found in the presence of advanced parenchymatous disease to which it is secondary. It can complicate tuberculous bronchial stenosis and, when a peripheral segment of bronchus becomes much dilated, the radiological appearance simulates a parenchymatous focus. Bronchial obstruction from primary hilar lymphadenitis may result in bronchiectasis, which may persist after all tuberculous inflammation has subsided (Brock, 1950).

Lower lobe bronchiectasis is sometimes associated with upper lobe parenchymatous disease (Dormer *et al.*, 1955). Occasionally active tuberculous bronchiectasis may be responsible for chest symptoms or a persistently positive sputum with a normal or near normal appearance of the plain radiographs (Dormer *et al.*, 1944).

In most cases bronchography is essential to

FIG. 2.

establish the diagnosis and little help is usually obtained from bronchoscopy.

The cases quoted above are of interest because:

(1) In Case 1, bronchiectasis was present as the sole demonstrable lesion in a patient who was free from symptoms and signs, but who had a positive culture of gastric washings. There was evidence of calcified lymph nodes in relation to the lesion, but at this stage they were not causing any bronchial obstruction.

(2) Case 2 is notable; the patient presented with similar radiological appearances, but she later developed symptoms and clinical signs which were relieved by rest and chemotherapy.

Repeated bacteriological examination was necessary to establish the diagnosis, and the response to treatment in both cases was excellent; in the second case, leading to a reversal of the bronchial dilatation as shown by bronchography. Unfortunately the other patient was not available for a repeat bronchogram.

After three years following the institution of treatment, both patients are well; rest and chemotherapy appear to have arrested the disease.

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