

ognizable alteration of lung function. Generally, the first roentgenographic sign of asbestosis is diffuse haziness over the lower third of the lung fields. In more advanced cases this has progressed to a "ground glass" appearance which obscures the broncho-vascular markings. Later, the upper portions of the lungs also become fibrotic, but the upper areas always remain more radiolucent than the lower.

Asbestosis and Carcinoma of the Lung

In recent years it has become clear that there is a more than fortuitous relationship between asbestosis and bronchogenic carcinoma. This belief is based on the following observations: (1) Approximately 13.8% of patients with asbestosis develop squamous cell carcinoma of the lung,¹ an incidence considerably greater than in persons the same age without other lung diseases or who have other pneumoconioses.⁵ (2) The cancer is usually in one of the lower lobes where the number of asbestos fibers is greatest. This contrasts with the data from cases of bronchogenic carcinoma not associated with asbestosis, in which the greater proportion are in the upper lobes.⁶ Squamous metaplasia of the membranes lining the bronchi and bronchioles is often observed in asbestosis, and the metaplastic cells frequently are atypical with appearances suggesting transition toward carcinoma.

It has also been suggested that asbestosis may predispose to mesothelioma of the pleura. Thirty-three cases of this tumor were observed over a period of four years among South African workers in asbestos mining operations, and one case of asbestosis complicated by pleural mesothelioma has been described in this country.⁷

At the present time, the mechanism by which asbestosis predisposes to neoplasm of the lung or pleura is unknown. Squamous metaplasia of bronchial columnar epithelial cells, predisposing to carcinoma, is known to occur as a result of chronic inflammation from the smoking of cigarettes as chronic

endocervicitis can lead to squamous carcinoma of the uterine cervix through the same series of anatomical progression. Mechanical irritation of the asbestos fibers probably leads to squamous cell metaplasia of the bronchi and to bronchogenic carcinoma in the same way.

Summary

Asbestosis is a chronic progressive pulmonary disease which results from irritation of the lungs by crystalline asbestos fibers.

The disease is often unsuspected clinically because the occupational exposure to dust containing asbestos fibers has not been elicited, and because the chest films may not be diagnostic even in the presence of disabling abnormality.

In asbestosis, pulmonary and subpleural fibrosis distort the lungs and lead to respiratory insufficiency.

Squamous metaplasia of the bronchial epithelium is induced by the irritating fibers, and in some cases there is progression to squamous cell carcinoma of the lung. Pleural mesothelioma is also reported, particularly in cases of asbestosis in South Africa.

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