

SPECIAL INVESTIGATIONS

Radiological Features

The X-ray findings roughly parallel the clinical progress. The initial radiographs may show few changes. In about a third of the cases, radiological signs of asbestosis were present. Asbestosis, in individuals with a proved and adequate record of exposure, is characterized by evidence of diffuse interstitial fibrosis of varying degree. In a well-established case the appearance will conform to the well-known classical pattern of pulmonary asbestosis. This may be either a generalized homogenous clouding of the lung fields, particularly the lower zones, or a fine striate and fibrillary change in the lung structure, with progressive loss of pulmonary radiolucency (Fig. 3).

In the majority of cases of asbestosis, old-standing pleuritic changes are also seen. Thus a combination of both pleural and pulmonary parenchymal pathology frequently occurs. The pleural changes take the form of bilateral pleural thickening, pleural adhesions and rather characteristic dense calcific plaques (Frost *et al.*¹⁰). While pleural thickening *per se* in asbestosis is non-specific in character, sclerotic pleurisy, with plaque formation, constitutes a readily recognizable and rather typical entity (Fig. 4). The pattern of calcification patently differs from

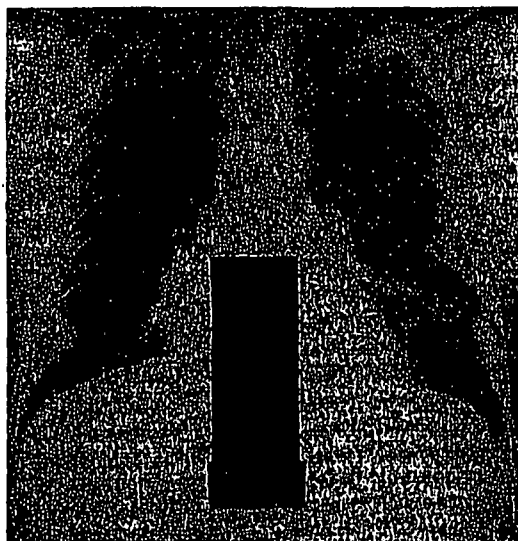


Fig. 4. Extensive bilateral pleural plaque formation. Typical involvement of paramediastinal and diaphragmatic pleura is also demonstrated.

pleural calcification due to other causes. This pattern was recognized frequently during the recent investigations of miners and millers. Even the chance finding of such typical calcification is now accepted as being highly significant, so that previous exposure to asbestos may be predicted with reasonable confidence. The dense plaques, however, do simulate those described in workers exposed to other silicate dusts such as tremolite talc, calcitmine and

mica (Smith¹¹). The plaques may be few or widespread. They are usually bilateral, and disposed in irregular patches, chiefly in the middle and lower zones. Seen end-on they appear as linear plaques in the periphery, along the diaphragmatic contours, and adjacent to the mediastinum. A lateral view of the thorax will also very often show extensive linear plaque formation, involving the diaphragm and the anterior aspect directly behind the sternum. Such pleural calcification was encountered in several of our cases of mesothelioma (Hurwitz^{12, 13}).

However, in the majority of cases, no evidence of preceding pleural or pulmonary asbestosis was found. These cases, on investigation, invariably showed unilateral pleural involvement in the form of diffuse thickening or effusion. The appearance may be massive from the beginning, but usually a localized scalloping, or solitary mass in the periphery, raises the first suspicion of pleural neoplasm. As the disease advances, more extensive nodular or 'lumpy' pleural thickening develops (Fig. 5). This pattern



Fig. 5. Nodular pleural thickening, seen clearly on the right.

of unilateral pleural pathology is a highly significant finding in a patient from the asbestos areas, but of course, a similar appearance may be produced by secondary malignant involvement of the pleura. Very often a large pleural effusion will obliterate the picture and, only after removal of the fluid, will it become apparent that the pleura is grossly thickened and nodular. Both the parietal and visceral pleura are affected and an induced pneumothorax, particularly, will clearly demonstrate the rather characteristic pattern of marginal massive nodularity along the parietal chest wall, over the surface of the collapsed lung, and at the base (Fig. 6).



Fig. 6. Lateral view of the thorax showing extensive linear plaque formation involving the diaphragm and the anterior aspect directly behind the sternum.

In the lateral view of the thorax, the cavity may remain uninvolved, but the lung may be covered by a thick, irregular pleural mass. This may come in the form of a thick, irregular mass, or it may be a change in the texture of the lung, or a change in the shape of the lung.

Stout and Ponderant reported by present author had right-sided pleural thickening of the parietal pleura.

Thoracoscopy

The initial appointment for thoracoscopy was scheduled for the 14th of January. The patient was not available for the procedure. The technical details of the procedure are not described here, but the usual diagnostic findings are reported.