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Diseases of the Chest

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effusion. The localized mesotheliomas may be predecessors of the diffuse type of mesotheliomas.

Diffuse Mesotheliomas

Many malignant tumors found in the pleural space and reported as being derived from the pleura are regarded by some pathologists as being of pulmonary origin. Peripheral bronchogenic carcinomas of undifferentiated type may invade the pleural space so prominently as to simulate pleural tumors. Many of the "pleural endotheliomas" are now thought to be of bronchogenic origin.

True pleural mesotheliomas appear as broad sheets of cells, often seeming to originate in the interlobar fissures but later invading the entire pleural space. Wide variations in histologic structure are reported but the characteristic most worthy of note is the appearance of whorls of cells like those of a meningioma. There is much variation within the tumor, some regions containing spindle-shaped sarcoma-like cells and elsewhere adenocarcinoma is simulated.

The principal clinical manifestation of pleural tumors is effusion. The effusion is massive and recurrent; some cases have continued to form fluid for a year or two before a diagnosis was established. The fluid may be bloody or clear and cases are known which intermittently yielded bloody fluid. No distinction may be possible between fluid due to tuberculosis and that due to a relatively benign pleural tumor except that the latter does not respond to antituberculosis drug therapy and does not resolve spontaneously. Weight loss, anemia, fever and progressive weakness are terminal events, but the patient may be relatively well for the first several months.

Roentgenographic signs may be limited to those of fluid, but sometimes tumors may be seen if artificial pneumothorax is induced.

The diagnosis of primary pleural tumors is rarely, if ever, possible on clinical and roentgenographic grounds. Thoracotomy with biopsy is the procedure of choice; needle biopsy may be of value, especially if done under radioscopic guidance. In some medical centers there is a growing tendency to advocate exploration in cases of undiagnosed pleural effusion, even when neoplastic disease is improbable.

An alternative to open thoracotomy is thoracoscopy, following induction of artificial pneumothorax, provided there is adequate free pleural space and if the services of a skilled thoracoscopist are available. This art is vanishing with the decrease of therapeutic pneumothorax as a method of treating pulmonary tuberculosis.

Treatment of primary pleural tumors is similar to that of other intrathoracic neoplasms—removal if possible; if not, radiotherapy. Radiotherapy may be radical if cure appears possible; otherwise palliative radiotherapy is indicated. Unfortunately pleural tumors are rarely recognized at a curable stage—perhaps this would not be true if pleural effusions were explored more frequently. Surely some pleural tumors are resectable, the degree of malignancy being highly variable.

METASTATIC PLEURAL TUMORS

Pleural metastasis is frequent in association with pulmonary metastasis (see Chapter 22). Tumors sometimes appear to grow luxuriantly in the pleural space, extending as plaques and sheets of tumor and exciting the production of copious amounts of pleural fluid. Characteristically the fluid of pleural metastasis is tinged with blood but often the fluid is clear, especially for the first few weeks. Pleural effusion is a common manifestation of pulmonary metastasis but eventually the intrapulmonary tumor becomes visible roentgenographically.

Whenever pleural fluid is detected in a person in the "cancer age" metastasis will re-

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