A 30-year-old man, a nonsmoker, was admitted to the hospital with symptoms of alcoholic withdrawal. A roentgenogram of the chest was obtained on admission (Fig 1). The physical examination was unremarkable except for neurologic changes. A few days later, he developed fever, became hypoxemic and dyspneic, and worsened clinically. A second chest roentgenogram was obtained 12 days after admission (Fig 2).
Diagnosis: Large cell carcinoma of the lung

Figure 1 shows enlargement of the superior mediastinal nodes and minimal perihilar infiltrate. Figure 2 shows considerable progression of the infiltrate to a diffuse process involving all lobes of both lung fields. Biopsy of the lingula and left hilar nodes revealed undifferentiated carcinoma of the large cell type with vascular invasion (Fig 3).

In a series of 97 patients with large cell carcinoma of the lung, 61 percent presented with a peripheral mass ranging from 1.5 to 4 cm in diameter. Gajaraj et al reported 12 cases of large cell carcinoma of the lung, all presenting as a lobulated or rounded mass 0.5 to 10 cm in diameter. In addition, two patients had dense patches of consolidation. Bronchiolar carcinoma, which is considered a variant of adenocarcinoma, often presents radiographically with localized or diffuse poorly-defined infiltrate. This form of presentation is rare in large cell carcinoma.

The differential diagnosis of rapidly progressing pulmonary carcinoma includes a variety of conditions. Lymphangitic metastatic carcinomatosis with or without hilar adenopathy is a common cause of rapid radiographic progression. The picture is commonly one of bilateral diffuse feathery infiltrate and resembles other entities such as pulmonary edema and interstitial disease. Common sites of origin include the bronchus, stomach and breast. Miliary carcinomatosis of the lung is produced when a main branch of a pulmonary artery is invaded by a highly cellular anaplastic tumor. Carcinoma of the thyroid and prostate represent two of the more common neoplasms that metastasize through this route. Such hematogenous spread, however, is most commonly nodular in type and not confluent.

Tumor doubling time in lung neoplasms depends somewhat on cell type, adenocarcinoma enlarging more rapidly than the epidermoid or small cell variety.

The chest roentgenogram often reflects the manner in which a neoplasm spreads through the lung, i.e., via lymphangitic, vascular, or direct extension. The former two mechanisms are more often associated with a rapid and diffuse change, while the latter is not. In our patient, the appearance combined with the histologic picture suggests rapid dissemination of the primary tumor throughout the lung via the invaded vessels.

REFERENCES

7 Straus M. Growth characteristics of lung cancer and its application to treatment design. Semin Oncology 1974; 1:167-174