Cavitation in Metastatic Pulmonary Neoplasm

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Necrosis and cavitation are a frequent occurrence in primary tumors of the lung. However, pulmonary cavitation of a metastatic nodule in the lung is rare. Doloff and Hansen in a survey of the literature did not find a previously recorded example of such an occurrence. Others however, have reported cavernous lesions in metastatic carcinomas. More recently two additional cases were reported, showing multiple cavitation. The following case is described in order to call attention to metastatic disease in the differential diagnosis of pulmonary cavities.

A. Z., a dentist, age 66, was admitted to the Jewish Memorial Hospital on April 5, 1951, with the history of acute upper respiratory infection for seven weeks prior to admission. This was accompanied by slight cough with scanty expectoration, and sore throat. He ran a low-grade fever up to 102° for several days prior to admission. His presenting complaint was that of extreme weakness and dizziness. He further complained of increased constipation and black stool, and weight loss of 12 lbs. He had been operated upon at the Mt. Sinai Hospital, New York City, eight years before for obstructing adenocarcinoma of the transverse colon.

Physical examination revealed a middle-aged white male who appeared chronically ill. There was dullness over the upper lobe of the right lung, with occasional scattered rales over both bases. Examination of the heart was negative. Liver, kidney and spleen were not palpable. There were no palpable glands. Blood count on admission showed hgb. 6.5 gm., red blood cells 1,900,000, with achromia, anisocytosis and microcytosis. A sternal marrow puncture was done two days after admission. This revealed a myeloblastic picture.

Roentgenological examination revealed multiple nodular lung densities with atelectasis. The hilar glands were enlarged and the right upper lobe showed a pneumonic density suggestive of atelectasis, at the outer aspect of which a cavity could be seen (Fig. 1).

He developed epistaxis and transfusions were given. His condition became worse, and despite supportive measures, he died three weeks after admission. Three days before death, he developed an enlarged spleen and petechiae. The white count rose to 129,000 and the platelets fell to 70,000.

The following pertinent necropsy findings were noted in the lungs:

The left lung was aerated and on cut section showed several discrete rounded nodular tumor masses with marked central necrosis. The right lung was bulky. The right upper lobe was taken up by a large solitary nodular rounded tumor mass with marked central cheesy necrosis measuring 4 cm. in diameter. The right middle lobe showed a similar solitary nodular tumor 1½ cm. in diameter.

Microscopic examination showed invasion and replacement by markedly atypical glandular epithelium with marked disorientation of the nuclei. Extensive secondary degeneration and necrosis was present. Other section showed extensive intraalveolar mononucleosis and heart failure cells with septal and alveolar elements. Some sections showed extensive pulmonary infiltration with surrounding hemorrhage and necrosis of lung parenchyma. Other sections showed extensive interstitial leukemic infiltrations consisting of very young large myeloid cells.

Summary of autopsy findings: Metastases to the lungs from a primary adenocarcinoma of the transverse colon in a patient who developed a superimposed acute leukemia.

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Comment

The case of Dolgoff and Hansen showed that cavity formation was due to expectoration of a fragment of tumor tissue. In our case, extensive degeneration and necrosis was present in the metastatic nodular tumor in the lung. The primary neoplasm was adenocarcinoma of the transverse colon which had been resected eight years before. Solitary pulmonary metastasis nine and one half years after resection of a colon carcinoma has been previously reported.9

The rare occurrence of cavitation in metastatic pulmonary nodules may be due to the shortened life of patients with metastatic lesions. But in this era of extensive antimicrobial therapy, when the duration of life may be extended for a much longer period, more cases of this kind may be expected.

FIGURE 1: Large cavity in right upper lobe with fluid level. Rounded densities are also seen in both lower lung fields.
SUMMARY
1. A case of cavitation in a metastatic pulmonary neoplasm has been described.
2. Metastatic disease should be considered in the differential diagnosis of pulmonary cavitation.

RESUMEN
1. Se describe un caso de neoplasia metastática pulmonar excavada.
2. La metástasis neoplásica, debe tomarse en cuenta en el—diagnóstico diferencial de la excavación pulmonar.

RESUME
Les auteurs décrivent un cas de métastase néoplasique pulmonaire dans laquelle s'est creusée une cavité.
Il faut envisager le cancer secondaire quand on discute le diagnostic des cavernes pulmonaires.

REFERENCES