Short Reports

Probable malignant transformation of a pulmonary hamartoma

J THOMAS POULSEN, MARIANNE JACOBSEN, AND DORTHE FRANCIS

From the Institute of Pathological Anatomy, Bispebjerg Hospital, Copenhagen, Denmark

A pulmonary hamartoma is an uncommon benign tumour arising in the bronchial wall. The component tissues follow the general plan of development and may reach varying degrees of maturity and functional ability (Spencer, 1977). McDonald et al (1945) found hamartoma in 0·25% of pulmonary tumours in a necropsy series. Possible malignant transformation in a hamartoma is extremely rare, and only sporadic case reports on malignant hamartomas are at hand (Hayward and Carabasi, 1967). We report a further case.

Case report

An 81-year-old woman with no previous stay in hospital was admitted because of a rounded mass 7 cm in diameter in the left lung. Within the next two weeks a fracture developed in the body of the ninth thoracic vertebra.

An aspiration biopsy of the lung infiltrate showed pieces of mesenchymal, partly chondroid material with free oval nuclei consistent with a pulmonary hamartoma. An aspiration biopsy two months later of the fractured bone showed no tumour cells, while a repeated aspiration biopsy of the lung tumour showed, besides chondroid material, an unusual dominance of atypical epithelial elements suggestive of a malignant tumour. Because of pain, local x-ray treatment was given to the spine. The patient died six months after admission.

Necropsy findings

In the proximal part of the left lower lobe a 6 cm diameter rounded tumour was found. Tumour tissue was seen along the left main bronchus with infiltration of the regional lymph nodes. A compression fracture of the body of the ninth thoracic vertebra was noted. No other tumours were found throughout the body.

Histological examination

The round tumour consisted of chondromatous islands separated by loose, partly myxomatous connective tissue with areas containing fat cells, and clefts lined with small cylindrical or cuboid epithelial cells. Cilia were seen in some places on the surface of the epithelial cells. About three-quarters of the tumour consisted of this typical hamartoma-like picture, and the periphery was here well demarcated and surrounded by compressed lung tissue.

Fig 1 An area from edge of tumour. In lower right corner is typical cartilage-containing hamartoma. Arrow shows typical malignant tumour tissue surrounding an island of cartilage. Haematoxylin and eosin ×25 (original specification).

In the remaining quarter of the tumour the epithelial component had a different appearance. Between the chondromatous islands the tissue was split by numerous clefts and gland-like, epithelial lined spaces and, in some places, diffusely invaded by epithelial-like cells (fig 1). These cells were small and regular, the cytoplasm being scanty or indistinguishable. The picture was that of an immature tumour. Epithelial
tumour components infiltrated the adjacent part of the surrounding lung tissue, partly growing in alveolar spaces, partly infiltrating along blood vessels. Furthermore, this tumour tissue infiltrated the wall of the left main bronchus including vessels, peripheral nerves, and lymph nodes. Tumour tissue was not seen invading or arising from the mucosal cell lining.

The samples from the fractured spine showed, besides reactive changes, metastatic tumour. Numerous solitary gland-like configurations were encountered (fig 2).

Discussion

Hayward and Carabasi (1967) have reported a case similar to ours, a malignant adenocarcinoma probably arising in a chondromatous hamartoma. In a critical review of 12 reported cases they concluded that most either lacked evidence that the original tumour was a hamartoma or scarcely showed convincing evidence of malignant change. We were able to review the speci-
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J T Poulsen, M Jacobsen and D Francis

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