Lung Cancer Presenting as an Asymptomatic Pneumatocele

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A pneumatocele was incidentally found in a 62-year-old man who had smoked 50-pack years. There was no abnormality on chest radiograph taken for routine examination 18 months previously. Chest CT showed a 3 cm-sized, thin-walled cystic lesion in RUL suggesting a pneumatocele, possibly following infection. However, the cystic lesion was slightly increased in size with irregular wall thickening and lobulation on chest radiograph and CT taken 5 months later (Picture 1). Thoracoscopic excisional biopsy was done because percutaneous needle biopsy was impossible due to the

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lack of solid portions within the cyst. Unexpectedly, poorly differentiated squamous cell carcinoma was diagnosed (Picture 2).

Pneumatoceles are air-filled cystic lesions of the lung parenchyma. By definition, cyst is a non-specific term describing an air- or fluid-containing, thin-walled lesion while bulla is defined as a sharply demarcated area of emphysema with a very thin wall. Therefore, other areas of emphysema should be visible as bulla on chest CT (1). Pneumatoceles usually occur in association with pneumonia, trauma and positive pressure ventilation, mostly in children following infection with staphylococcus, gram-negative bacilli etc (2, 3). Cystic changes in primary lung cancer are not uncommon and about 80% of them are squamous cell carcinoma (4). Although cystic changes in metastatic tumors are not as common as primary cancer, they also can develop (5). In the present case, the pneumatocele was the primary site of lung cancer and the check-valve mechanism might have contributed to the development of the pneumatocele lined with tumor cells. Lung cancer should be included in the diagnosis of a newly developed pneumatocele of unknown etiology in adults.

References


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Picture 2. Pathologic examination of the thinnest part of the cystic walls showed that the cystic wall was lined with a few layers of squamous cell carcinoma cells. Some of tumor cells were denuded into the cystic cavity. Peri-tumoral lung parenchyma revealed fibrotic change. (Hematoxylin and Eosin staining, ×40)