Synchronous Small and Non-Small Cell Lung Cancer in a Patient with Previous Tuberculosis

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A 73 years old man with a history of management for pulmonary tuberculosis 20 years previously presented with

Picture 1. (A) Multiple pulmonary opacities in both lungs were found on chest PA. (B) Chest CT revealed irregularly marginated opacities on both lung apices (*) and two lobulated, non-calcified masses on RUL (small cell carcinoma, ♣) and LUL (squamous cell carcinoma, ♦). (C) On PET-CT, the SUV of 18F-FDG uptake of lung lesions on both apices was relatively weak (2.9), whereas the SUV of two lung cancers was higher (10.7).

Picture 2. Specimens were obtained by the percutaneous needle aspiration of both lung masses. (A) Clusters of hyperchromatic small tumor cells and some necrotic debris from a mass on RUL (Papanicolaou, ×400) were seen. (B) Squamous cell carcinoma with abundant cyanophilic cytoplasm and large irregular nuclei from the other mass on LUL (Papanicolaou, ×400) were found.

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cough and sputum. He had smoked 50-pack years. Lobulated, non-calcified masses on both upper lobes and irregularly marginated opacities on both lung apices were found on chest CT. ¹⁸FDG PET-CT showed that the two lung masses were hypermetabolic with standardized uptake value (SUV) of 10.7 while lung apex opacities had a relatively weak SUVs of 2.9 suggesting that these might not be related with malignancy (Picture 1). Percutaneous needle aspiration of the right upper lobe mass revealed small cell lung cancer. In contrast, the left upper lobe mass was confirmed to be squamous cell carcinoma (Picture 2). One cycle of combination chemotherapy with etoposide (100 mg/m², day 1-3) and carboplatin (area under the curve 6, day 1) was administered. Although the size of both lung cancers was reduced showing a partial response, he refused further management because of poor tolerance to chemotherapy. Both lung apex opacities were unchanged after chemotherapy and during the subsequent follow-up and all microbiologic studies for acid-fast bacilli were negative indicating that these might be inactive lesions of previous tuberculosis (Picture 3).

The incidence of lung cancer has been known to be higher in patients with pulmonary tuberculosis. (1) There may be a cause and effect relationship such as scar cancer and reactivation of tuberculosis by cancer. According to a population-based case-control study, the risk of lung cancer exceeded 2.5 fold among persons diagnosed with tuberculosis within the past 20 years. (2)

Multiple synchronous lung carcinomas are not uncommon showing an incidence rate ranging from 1% to 7% (3) although the coexistence of small and non-small cell carcinoma has been reported in a very small fraction of cases. (4) As in the present case, the lung masses of small and non-small cell carcinoma cannot be discriminated by imaging studies because they usually have similar morphology on CT and the same SUV on ¹⁸F-FDG PET.

References


