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Mixed Squamous Cell and Glandular Papilloma of the Lung in a 64-Year-Old Woman

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Mixed squamous cell and glandular papilloma of the lung is an extremely rare benign epithelial tumor showing a mixture of squamous and glandular epithelium. Here, we report a case of mixed squamous cell and glandular papilloma that presented as a solitary nodule in the left lower lobe of a 64-year-old woman. Chest computed tomography demonstrated a lobulated mass in the basal segment of the left lower lobe. The patient underwent a lobectomy under the suspicion of lung malignancy. The histopathological diagnosis was mixed squamous cell and glandular papilloma.

Key words: 1. Lung neoplasms
2. Papilloma
3. Mixed squamous cell and glandular papilloma

CASE REPORT

A 64-year-old-woman with no respiratory symptoms was referred to our hospital with a left lower lung mass detected in a chest X-ray during a routine health examination. She was a never-smoker and had no history of any medical conditions, except for pulmonary tuberculosis that had been cured by medication 15 years previously. The chest X-ray revealed a mass approximately 3 cm in size, which was located in the left lower lung field with a well-defined border (Fig. 1A). The chest computed tomography (CT) revealed a 4×3-cm mass that was lobulated but not infiltrating the surrounding lung parenchyme in the left lower lobe mediobasal segment. The mass was homogenous with minimal necrotic findings in a small portion and was not enhanced upon contrast enhancement (Fig. 1B). No abnormality was revealed by the bronchoscopic gross and cytological examination. The blood test and the tumor marker study were normal. The positron emission tomography (PET)/CT revealed that the maximal standardized uptake value (SUV) was 6.7 in the left lower lung mass without mediastinal lymph node uptake (Fig. 1C). On the basis of the above examinations, we suspected lung malignancy that was in the operable stage; therefore, we planned surgical wedge resection biopsy and lobectomy if malignancy was confirmed. In the operation, the mass was resected by wedge resection with stapling and was diagnosed as adenocarcinoma upon a frozen section examination. Therefore, the patient underwent lobectomy, and the postoperative course was uneventful. Histopathologically, mixed squamous and mucin-secreting glandular epithelium covered the fibrovascular cores. In the focal area, mucin-secreting glandular epithelium showed a complex structure. Further, acantholytic

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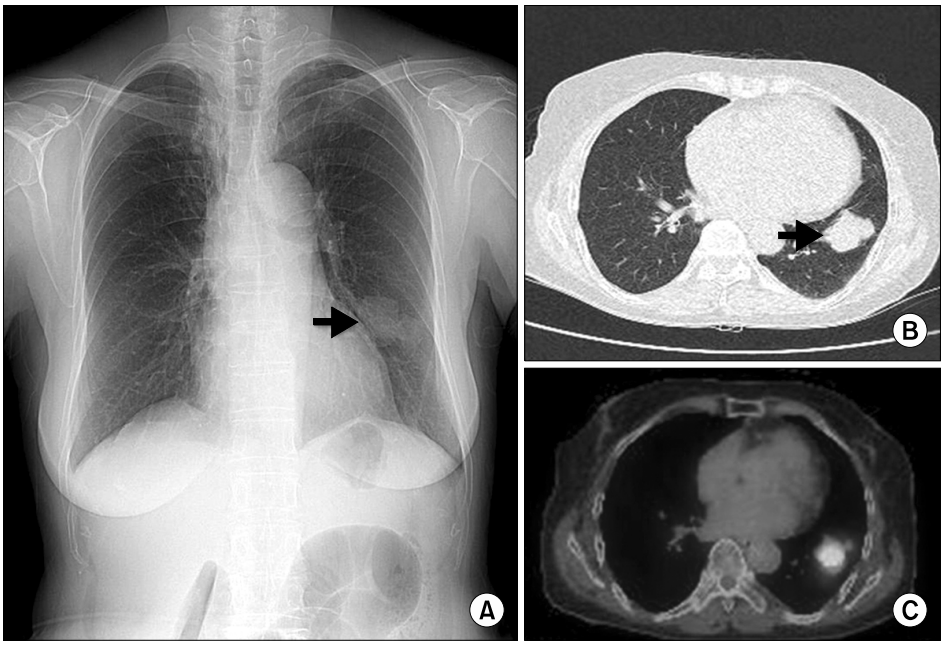

Fig. 1. (A) Chest X-ray shows a nodule (arrow) in the left lower lung field. (B) Chest computed tomography scan shows 4×3 cm lobulated nodule in the basal segment of the left lower lobe. (C) Further, a positron emission tomography scan shows increased uptake (maximal standardized uptake value of 6.7) in these nodular lesions.

squamous epithelial nests were mixed with mucin-filled epithelial cells with neutrophil and lymphoplasmacytic infiltrates (Fig. 2A–C). Immunohistochemically, the tumor cells were positive for cytokeratin (CK5/6 and CK7) and p63 (Fig. 2D). The Ki-67 proliferation index was less than 1%. These findings of the histopathological examination and immunohistochemical stain were compatible with mixed squamous and glandular papilloma. During the 18 months of follow-up, the patient has remained well and has not reported any medical problems.

DISCUSSION

Papilloma of the lung is a rare benign epithelial tumor that is sub-classified into three categories: squamous cell papilloma, glandular papilloma, and mixed squamous cell and glandular papilloma (mixed papilloma). Clinically, it is presented as three distinct types: multiple papilloma, inflammatory polyps, and solitary respiratory papilloma [1]. According to the pathological definitions, mixed squamous and glandular papilloma is an endobronchial papillary tumor showing a mixture of squamous and glandular epithelium, one third of which should be composed of the second epithelial type. The mixed papilloma was formerly called transitional papilloma [1].

Mixed papillomas are extremely rare. Tryfon et al. [2] reported a clinicopathological summary of mixed papillomas after reviewing 11 previously published reports and 5 of their cases in an article on the solitary papillomas of the lower airways. The male:female ratio was 4:1. The age distribution presented two peaks, in the third and the sixth decades. The most common symptom was coughing, but no presenting symptoms were specific to the mixed papillomas. We found 6 additional cases of mixed papilloma, which were not included in Tryfon's review, and most of them were Korean or Japanese patients, excepting only one case [3-8].

No specific etiologies have been implicated in the evolution of mixed papilloma. Smoking has no etiologic implications. In contrast to squamous cell papilloma, which has an association with human papilloma virus (HPV) subtypes 6 and 11, HPV has not been detected in the few cases of mixed papilloma that have been studied [1].

Most of the previously reported cases presented with a central rather than peripheral location; we found only 4 cases of peripherally located lesions, including our case [3,4,6]. Mixed papilloma located centrally can lead to bronchial obstruction or irritating manifestations such as cough, dyspnea, bleeding, or fever. Because of its location, size, and tumor

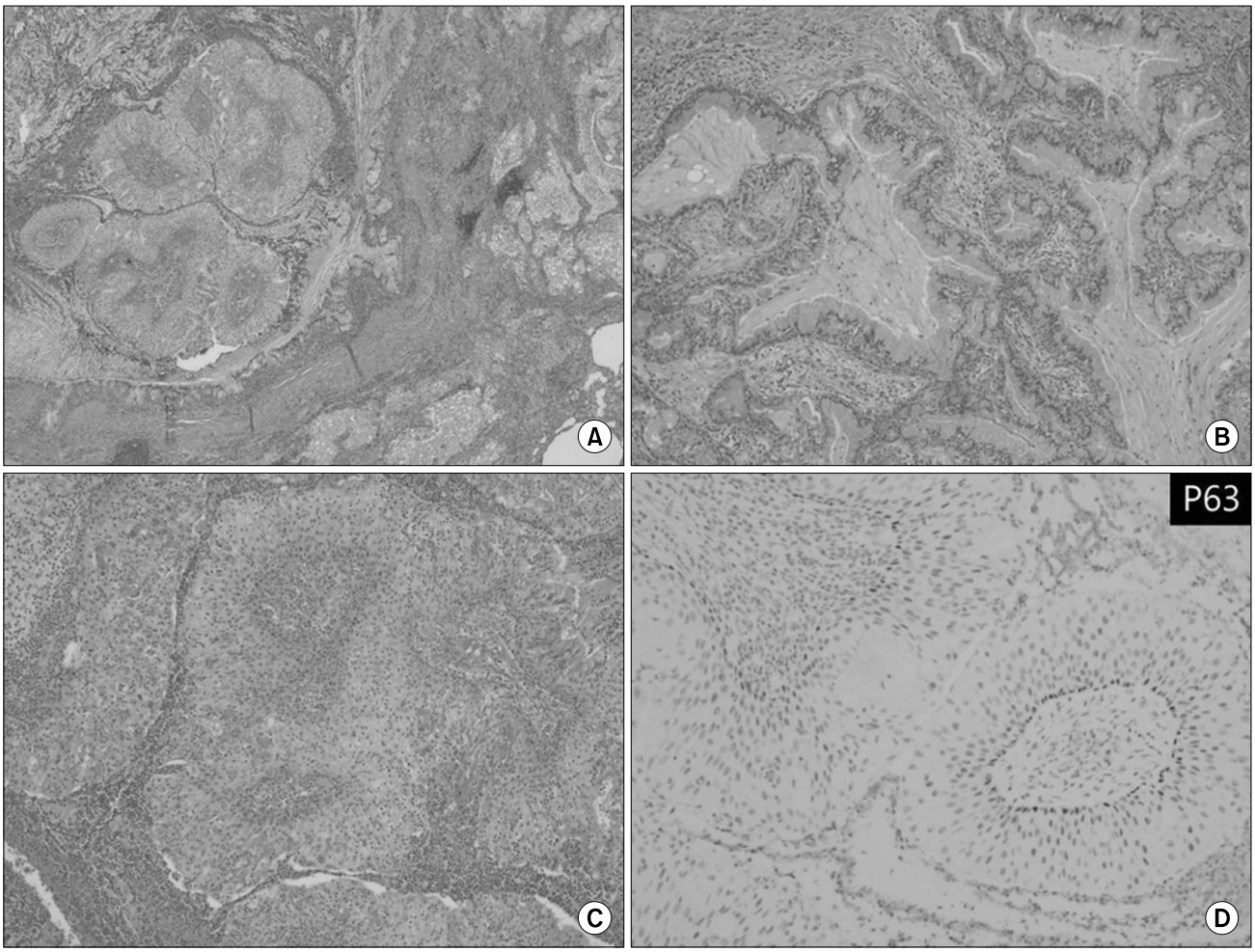

Fig. 2. Pathological findings. (A) Mixed squamous and mucin-secreting glandular epithelium covered the fibrovascular cores (H&E, ×20), (B) mucin-secreting glandular epitheliums (H&E, ×1,000), and (C) acantholytic squamous epithelial nests (H&E, ×1,000), and immunohistochemical staining. (D) The tumor cells were positive for p63.

characteristics, mixed papillomas are usually suspected to be malignant lesions before a histopathological examination. PET/CT findings of these tumors have rarely been reported [3]. The malignant lesions usually have high maximal SUV. However, the maximal SUV is not a good parameter for differentiating the benign tumor from lung malignancy, because both of them can show a high SUV.

A typical histological examination reveals that endobronchial lesions are composed of fibrovascular cores with scattered lymphoplasmacytic infiltrates lined by squamous and glandular epithelium with mucinous material. Mixed papillomas presenting as pulmonary tumors should be distinguished from well-differentiated squamous cell carcinomas, papillary adenocarcinomas, and other benign tumors, such mucus gland adenoma and papillary adenoma [6]. Immunohistochemical studies can be helpful in developing a differential diagnosis.

A malignant transformation occurs in some cases. Tryfon found a malignant transformation rate of 25% (4 of 16 cases). The observed malignancies were adenocarcinoma, squamous cell carcinoma, and low-grade differentiation cells of carcinoma [2]. Because a cytological examination is not helpful in differentiating mixed papilloma from lung cancer, and malignant transformations have been reported previously, complete surgical resection is mandatory for definitive diagnosis and curative treatment.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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