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Case Report

Plasmacytoid adenocarcinoma of the lung

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Abstract: Plasmacytoid adenocarcinoma of the lung has not been reported. Herein reported is the first case of plasmacytoid adenocarcinoma of the lung. A 68-year-old man presented with cough and sputum. X-P and CT demonstrated a large tumor (10 x 10 x 9 cm) in the right upper lobe. CT-guided needle biopsy was performed. The biopsy showed plasmacytoid malignant cells. The malignant cells were small, had eccentrically located nuclei, perinuclear halo, and basophilic cytoplasm. No mucins were observed by mucins stains. Immunohistochemical study showed that the tumor cells were positive for pancytokeratin AE1/3, pancytokeratin CAM5.2, TTF-1, Ki-67 (labeling 70%), CA19-9, and p53. They were negative for neuron specific enolase, CEA, CD45, CD68, chromogranin, synaptophysin, surfactant apoprotein A, CDX-2, κ-chain, λ-chain, KIT, and PDGFRA. Since epithelial markers and adenocarcinoma markers were positive, the pathological diagnosis was plasmacytoid adenocarcinoma of lung. The patient is now treated with chemotherapy.

Keywords: Lung, plasmacytoid adenocarcinoma, histopathology, immunohistochemistry

Introduction

Plasmacytoid carcinoma is extremely rare. Most cases of plasmacytoid carcinoma are plasmacytoid urothelial carcinoma of the urinary bladder [1, 2]. Plasmacytoid carcinoma of the lung has not been reported, to the best of the author's knowledge. Herein reported is the first case of a plasmacytoid adenocarcinoma of the lung.

Case report

A 68-year-old man presented with cough and sputum. X-P and CT demonstrated a large tumor (10 x 10 x 9 cm) in the right upper lobe (**Figure 1**). Sputum cytology and transbronchial lung biopsy failed to detect carcinoma cells. Therefore, CT-guided needle biopsy was performed. The biopsy showed plasmacytoid malignant cells (**Figure 2A**). The malignant cells were small, had eccentrically located nuclei, perinuclear halo, and basophilic cytoplasm (**Figure 2B**). No mucins were observed by mucins stains.

An immunohistochemical study was performed with the use of Dako Envision method, as previously described [3, 4]. The immunohistochemical study showed that the tumor cells were positive for pancytokeratin AE1/3 (**Figure 3A**), pancytokeratin CAM5.2, TTF-1 (**Figure 3B**), Ki-67 (labeling 70%), CA19-9 (**Figure 3C**), and p53. They were negative for neuron specific enolase, CEA, CD45, CD68, chromogranin, synaptophysin, surfactant apoprotein A, CDX-2, κ-chain,

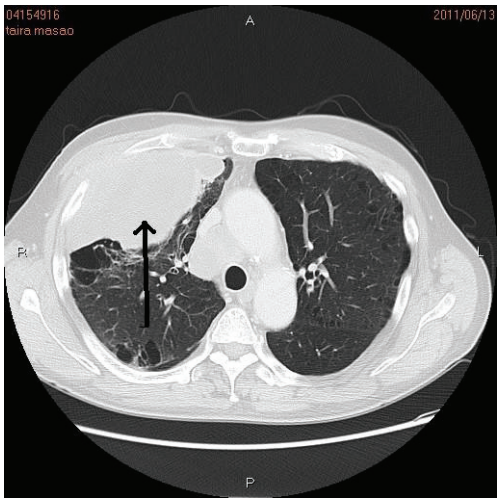


Figure 1. CT demonstrates a solid tumor (10 x 10 x 9cm) (arrow) in the right upper lobe.

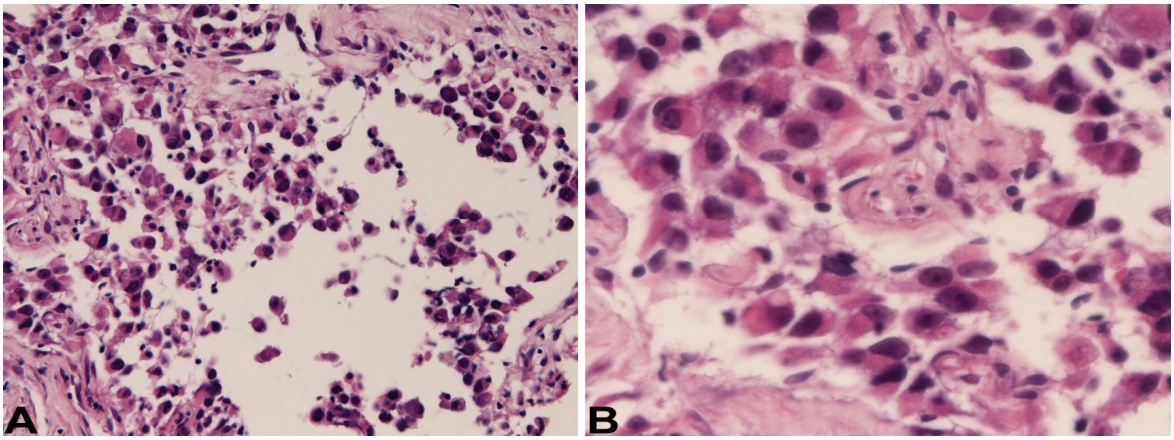
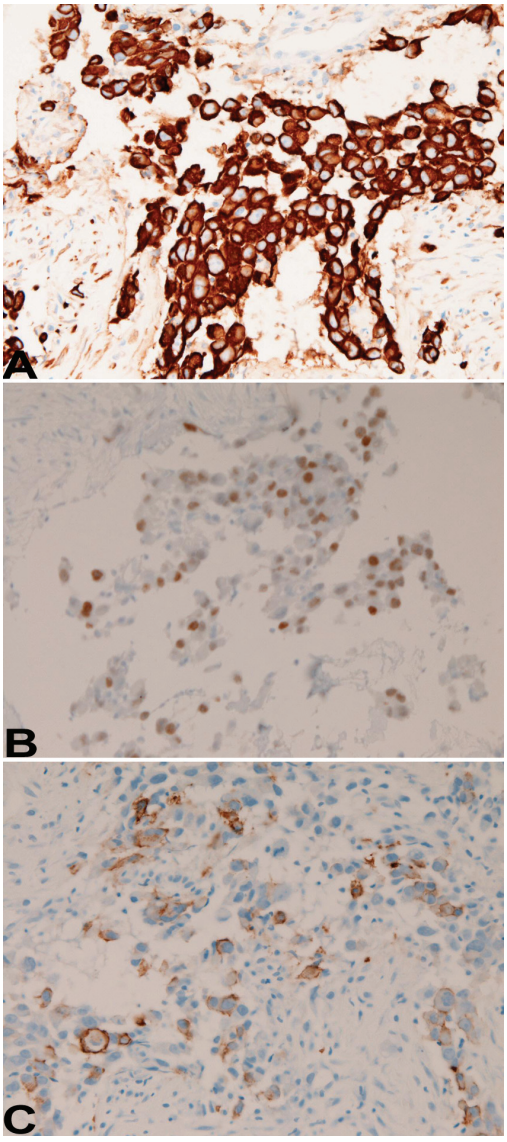


Figure 2. Histology of the pulmonary tumor. A. Plasmacytoid tumor cells are seen. HE, x50. B. Higher power view showed small plasmacytoid tumor cells eccentrically located nuclei, perinuclear halo, and basophilic cytoplasm. HE, x200.



λ-chain, KIT, and PDGFRA. Since epithelial markers and adenocarcinoma markers were positive, the pathological diagnosis was plasmacytoid adenocarcinoma of lung. The patient is now treated with chemotherapy.

Discussion

The present tumor is histologically very similar to plasmacytoid urothelial carcinoma of the urinary bladder [1, 2]. In addition, the tumor cells in the current case histologically resembled plasma cells. However, immunohistochemically-positive CKs, and CA19-9 are indicative of epithelial natures of the tumor cells. In addition, the cytological atypia, high Ki-67 labeling (70%) and p53 positivity indicate malignant characteristics. The positive CA19-9 indicates that the tumor cells are adenocarcinoma cells. Positive TTF-1 in the tumor cells indicates that the current tumor is pulmonary adenocarcinoma. The neuroendocrine markers (neuron-specific enolase, chromogranin, and synaptophysin) were negative, indicating that the current lung tumor does not show neuroendocrine differentiation. CD45, λ-chain, and κ-chain were negative, suggesting that the tumor is not leukocytes or plasma cells. CD68 was negative, showing that the tumor cells are not macrophages or histiocytes. KIT and PDGFRA were negative, indicating that the tumor is not GIST or related tumors. Therefore, the author diagnosed the present case as plasmacytoid adenocarcinoma

Figure 3. Immunohistochemical features. The tumor cells are positive for pancytokeratin AE1/3 (A), TTF-1 (B) and CA19-9 (C). Immunostaining, x200

of the lung. The current tumor is not signet ring cell carcinoma histologically.

In conclusion, the first case of plasmacytoid adenocarcinoma of the lung was reported.

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