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Bronchial Mucous Gland Adenoma of the Lung: A Rare Tumor: A Case Report

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Abstract | **Case Report**

Bronchial mucous gland adenoma (BMGA) is a very uncommon, benign lung tumor, defined as a proliferation of seromucous glands in the bronchial lamina propria. The majority arises within the main, lobar, or segmental bronchi. The diagnosis depends on tissue biopsy. Mucous gland adenoma needs to be distinguished from low-grade malignant tumors of the bronchus, most considerably, invasive mucinous adenocarcinoma and low-grade mucoepidermoid carcinoma. We report the case of a 40-year-old man who was operated for a broncho-pulmonary tumor whose anatomopathological study revealed an adenoma of the bronchial mucous glands. Through this case, we present the histological characteristics that led to the diagnosis and discuss the different differential diagnoses.

Keywords: Bronchus, mucous gland adenoma, lung tumor.

INTRODUCTION

Bronchial mucous gland adenoma is a rare, solitary, benign, well circumscribed, multicystic, predominantly exophytic tumor causing signs and symptoms of obstruction [1].

Microscopically, it presents as mucus-filled cysts, acini and glandular structures, lined by a single layer of epithelial cells [2, 3].

We report a case of this rare pulmonary tumor and discuss the different elements of the positive and differential diagnosis.

CASE REPORT

A 40-year-old patient, with no particular history, consulted for a chronic cough. The clinical examination is unremarkable.

Chest computed tomography revealed an endo-bronchial mass without ventilatory disturbance evoking a bronchial carcinoid tumor.

A right upper lobectomy was performed and the surgical specimen was sent to our structure for histological analysis.

Macroscopic examination of the resected specimen showed a lobectomy measuring 16x12x3cm.

On section, we note the presence of a whitish endobronchial lesion measuring 2.8cm in maximum diameter, containing a mucoid material that involved the adjacent lung tissue as well.

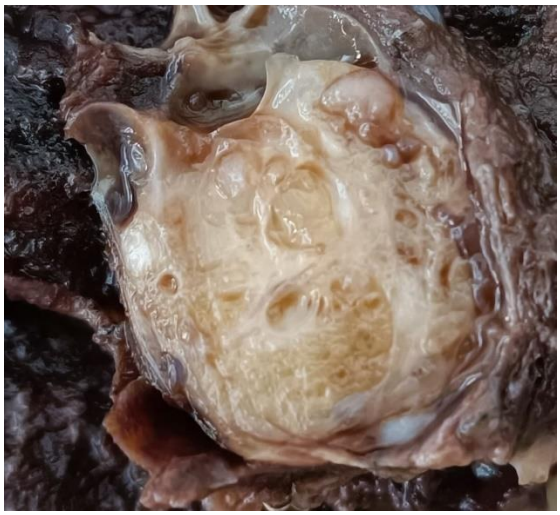

Figure 1: Sagittal section of the right upper lobe of the lung showing a white endobronchial tumor and mucoid materiel involving the adjacent lung tissue

Microscopic examination showed a polypoid neoplastic proliferation of glandular structures of variable size, acini and tubules lined by single layer of cubic or cylindrical cells; tumor cells are small with regular nuclei, fine chromatin, and abundant mucinous cytoplasm. There were no cytological atypias or mitotic figures. The adjacent lung parenchyma shows the presence of pools of acellular mucin.

Immunohistochemistry showed negativity for cytokeratin 20, CDX2, and thyroid transcription factor (TTF1), myoepithelial cells showed expression of anti-P63 antibody. The final diagnosis of bronchial mucous gland adenoma was reported.

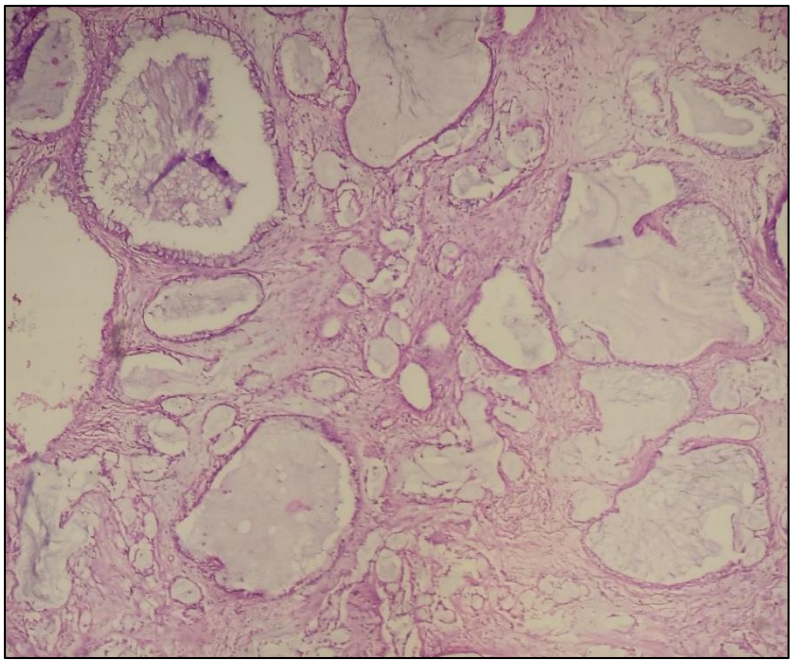

Figure 2: Photomicrograph showing a tumor composed predominantly of irregular glands, acini, and cysts containing mucin (H and E, ×20)

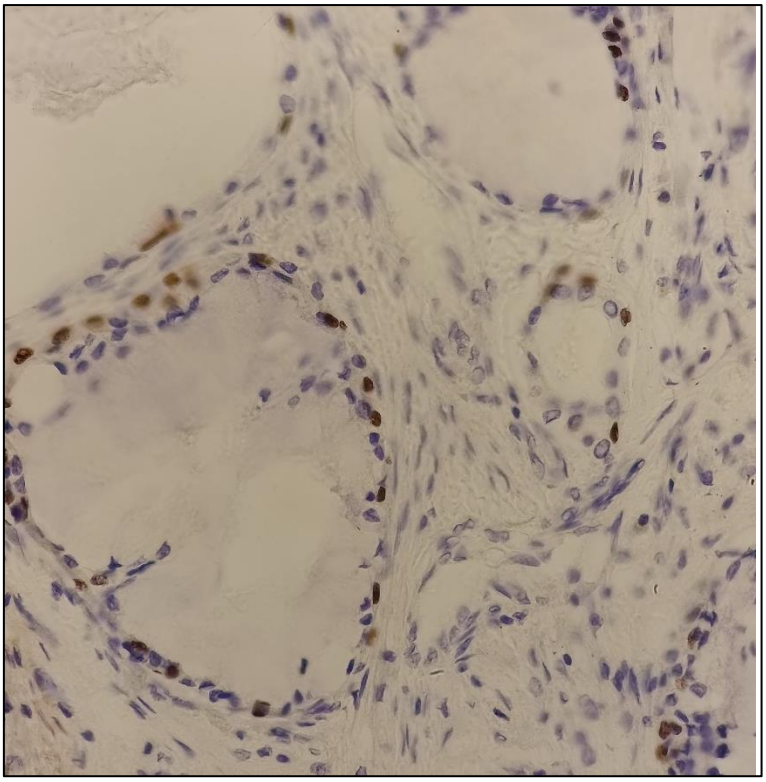

Figure 3: Immunohistochemical staining showing p63 staining of peripheral myoepithelial cells

DISCUSSION

Mucous gland adenoma is a rare benign tumor that histologically resembles bronchial seromucinous glands. It occurs in the proximal airways, most commonly in the segmental or lobar bronchi but has also been described in the trachea or peripheral airways [4, 5].

The tumor occurs with equal frequency in men and women and at any age (average 52 years), including children [5].

Clinical manifestations are the result of bronchial obstruction due to tumor growth and include hemoptysis, cough, dyspnea, wheezing, and sometimes pneumonia [6].

Macroscopically, mucous gland adenoma appears as a white, smooth, shiny endobronchial tumor mass. When cut, the color is beige to pink with a solid or cystic and often mucoid appearance. The size varies between 8 and 68 mm.

Histologically, these neoplasms are well circumscribed and contain numerous mucin-filled cystic spaces, and they may include acinar, glandular, or tubular structures without papillary formation. Tumor cells are mucus-secreting, cylindrical, cubic or flattened cells. Oncocytic cells, goblet cells or ciliated cells may be present. They show no atypia. Mitoses are usually absent [2, 4, 7].

Immunohistochemically, a bronchial adenoma usually expresses keratin, EMA and CEA but is negative for thyroid transcription factor-1 (TTF-1).

Myoepithelial cells scattered around the periphery of the glands may show expression of p63 and S-100 [2].

The differential diagnosis includes malignant lesions such as adenocarcinoma and low-grade mucoepidermoid carcinoma, as well as benign adenomatous lesions namely glandular papilloma, papillary adenoma, alveolar cell adenoma and mucinous cystadenoma.

Absence of intermediate cells distinguishes mucous gland adenoma from low-grade mucoepidermoid carcinoma. Invasive mucinous adenocarcinomas involve the alveolar parenchyma rather than showing exclusive endobronchial growth.

Endobronchial metastases from foreign sites should be excluded by clinical history and cellular atypia.

The glandular papilloma has typical fibrovascular axes, lined with ciliated or non-ciliated columnar cells and a variable proportion of cuboid and goblet cells.

Mucinous cystadenomas, papillary adenomas and alveolar cell adenomas are parenchymal lesions [2, 4, 6].

In conclusion, Bronchial mucous gland adenoma is a rare benign tumor of the lung, with unspecific signs and symptoms.

Recognition of this unusual entity, both for pulmonologist and pathologist, is vital, in order to make the diagnosis of certainty as well as and appropriate therapy.

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