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CASE REPORT

J. Anton-Pacheco · M. A. Jimenez
J. L. Rodriguez-Peralto · J. Cuadros · F. J. Berchi

Bronchial mucoepidermoid tumor in a 3-year-old child

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Abstract A 3-year-old girl was evaluated for persistent middle lobe atelectasis. Fiberoptic bronchoscopy revealed a spherical mass occupying the middle-lobe bronchus. The biopsy specimen disclosed a low-grade mucoepidermoid carcinoma. A lobectomy was performed. The patient is in good condition 2 years after the operation. Mucoepidermoid tumors are rare bronchial adenomas comprising 1% of all lung neoplasms. Children are very infrequently affected. The clinical behavior of these tumors is controversial. Surgical resection of the low-grade-type tumor has an excellent prognosis.

Key words Mucoepidermoid carcinoma · Bronchial adenoma · Children

Introduction

Mucoepidermoid tumors of the bronchial tree are very uncommon lesions, representing 1% of all pulmonary neoplasms [7, 9]. A recent paper revealed that only 30 cases of mucoepidermoid tumors of the lung in children under 16 years of age have been reported in the literature [8]. These lesions are believed to originate from the minor salivary glands lining the tracheobronchial tree, and their clinical behavior varies widely [9]. We observed a low-grade mucoepidermoid carcinoma (MEC) of the bronchus in a 3-year-old girl in whom a lobectomy was performed, with excellent results.

J. Antón-Pacheco (✉) · M.A. Jimenez · J. Cuadros · F.J. Berchi
Servicio de Cirugía Pediátrica,
Hospital Universitario 12 de Octubre,
Madrid 28041, Spain

J.L. Rodriguez-Peralto
Divisions of Surgical Pathology,
University Hospital 12 de Octubre,
Madrid, Spain

Case report

A 3-year-old girl with a 2-month history of fever, respiratory symptoms, and occasional vomiting was referred to our institution for evaluation of persistent middle lobe (ML) atelectasis. Physical examination at admission was normal except for bilateral expiratory wheezes on auscultation. She had a leukocytosis of 11,000/mm^3 with predominantly lymphocytes and no electrolyte imbalance. Arterial blood gas values were normal. Her chest radiograph showed an infiltrate involving the right ML; 24-h esophageal pH monitoring was normal. The patient underwent fiberoptic bronchoscopy that revealed a spherical mass occupying the right ML bronchus. The lesion was biopsied, showing a low-grade MEC. She subsequently underwent a right thoracotomy and middle lobectomy.

Pathologic examination showed a 2.3-cm, exophytic mass filling the bronchial lumen and partially destroying the bronchial wall. The peripheral lung parenchyma was well-developed with no tumor involvement (Fig. 1). Microscopically, the neoplasm consisted of a proliferation of sheets, glands, and cystic structures composed of abundant clear cells, squamous, intermediate, and isolated mucinous cells. Nuclear atypia, mitotic figures, and tumoral necrosis were not present (Fig. 2).

The patient had an uneventful postoperative course; 2 years after surgery there is no local or extrathoracic recurrence and she is in good condition.

Discussion

Mucoepidermoid tumors of the lung are the rarest variant of bronchial adenomas, being slightly more common in female patients [7, 9]. Children are affected very infrequently, and our case seems to be the youngest patient reported. These lesions are believed to arise from the excretory ducts of the submucosal bronchial glands, and are located in the mainstem bronchus or the proximal portion of a lobar bronchus [4, 6, 7]. Symptoms, when present, are due to partial or complete airway obstruction and include cough, wheezing, and dyspnea. Chest radiographs may show nodular masses, areas of lung consolidation, and partial or complete atelectasis [3]. Because no characteristic features distinguish these tumors from bronchogenic carcinoma and other benign lesions, bronchoscopy and biopsy are especially helpful in establishing the diagnosis [5, 6].

Histologically, these neoplasms are classified as low-grade and high-grade carcinomas [9]. Low-grade tumors are more frequent in children; the lesions are well-circumscribed and usually present as endobronchial polypoid masses.

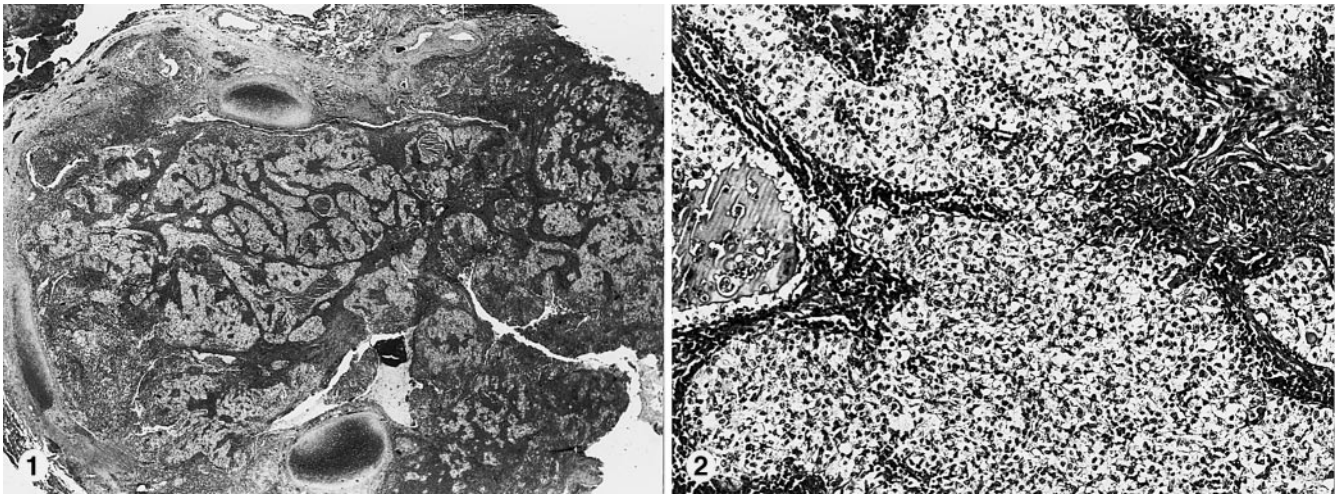

Fig. 1 Panoramic view of endobronchial tumor. Note wall involvement with undercartilaginous plate growth

Fig. 2 Neoplasic proliferation of clear cells with cystic structures

Although some of them may be aggressive, they usually behave in a benign fashion [1, 6, 9]. High-grade tumors are larger; invasion of adjacent pulmonary parenchyma is frequent and lymphatic or hematogenous spread may occur [6, 9].

In low-grade tumors surgical resection is the treatment of choice. Complete excision may be achieved by means of a lobectomy or sleeve resection. Endoscopic resection is not advised because of incomplete tumor removal and the risk of hemorrhage [8]. Postoperative radiation and chemotherapy are unnecessary, and the long-term prognosis is excellent [2, 6]. High-grade tumors, on the other hand, should be treated as well-differentiated non-small-cell or squamous carcinomas, with radical surgery and adjunctive radiation or chemotherapy if surgical extirpation is not feasible [6, 9].

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