Case report - Thoracic general

Endobronchial lipoma: a rare cause of bronchial occlusion

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Received 11 August 2003; received in revised form 19 November 2003; accepted 28 November 2003

Abstract

Benign neoplasms of the endobronchial tree are uncommon, and among them lipomas are the most uncommon. Endobronchial lipoma is histologically benign in character but may cause bronchial obstruction. We describe a 47-year-old woman with an endobronchial lipoma arising from the right main bronchus which was treated as asthma for 4 years.

Keywords: Endobronchial lipoma; Asthma; Surgery

1. Introduction

Benign tumors of the lung and endobronchial tree are uncommon. Endobronchial lipoma is an extremely rare benign tumor, with incidence ranging from only 0.1 to 0.5% in all lung tumors [1]. Endobronchial lipomas originate from the fat cells located in the peribronchial and occasionally the submucosal tissue of main bronchi [2]. We present a case with endobronchial lipoma treated as asthma for 4 years and associated with shortness of breath.

2. Case report

A 47-year-old woman presented with shortness of breath for 4 years and was treated as asthma. On examination, she had stridor. The spirometry trace indicated obstruction of the large airways. Chest radiograph was normal. Chest computed tomography (CT) scan demonstrated a fat density mass in the right main bronchus (Fig. 1). Flexible bronchoscopy revealed a round mass completely filling the lumen of the right main bronchus (Fig. 2).

Right posterolateral thoracotomy was performed and at bronchotomy, a mass of 1.5 × 1 cm in size was found occluding the right main bronchus. The tracheobronchial wall including the tumor was resected because the tumor had a wide base extending beyond the membranous wall of the right main bronchus. The defect of the tracheobronchial wall was repaired with intermittent absorbable sutures. The postoperative course was uncomplicated. The patient was discharged on day 5 and was asymptomatic at the 5-month follow-up.

Pathological examination showed mature adipose tissue growth in the bronchial submucosal layer and the tumor was diagnosed as an endobronchial lipoma.

3. Discussion

Most tumors of the tracheobronchial tree are malignant. Benign pulmonary tumors are rare entities, and among them lipomas are the most uncommon. Endothoracic lipomas are categorized into 5 groups: endobronchial, parenchymatous, pleural, mediastinal and cardiac [3]. Due to mechanical obstruction of the bronchus, endobronchial lipomas cause symptoms. These patients, associated with shortness of breath, are often misdiagnosed and treated for asthma, as in our patient.

Some investigators claim that smoking and obesity are significant risk factors for endobronchial lipoma [4]. Our patient had both risk factors.

The CT scan findings of lipoma, homogeneous mass with fat density and no enhancing contrast, are diagnostic. CT scan is valuable in localizing the origin and extent of the tumor.
In the literature, two-thirds of the lipomas occurred on the right side of the tracheobronchial tree, and most were located in the first three subdivisions of the tracheobronchial tree [5]. In our patient endobronchial lipoma was located in the right main bronchus and filled the lumen completely.

Endobronchial lipoma is histologically benign in character but may cause bronchial obstruction. When the spirometry trace indicates obstruction of the large airways, the patient should be evaluated with CT scan and bronchoscopy. These tumors can be managed by bronchoscopy; if bronchoscopic therapy is not possible, it should be considered for surgical resection before the tumor leads to irreversible distal complications.

References


Appendix A. ICVTS on-line discussion

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Date: 18-Jan-2004

Message: This is a very interesting case report with impressive figures. Nevertheless, there are some points that should be emphasized to your readers. When any surgeon faces a similar problem he has to answer the following questions:

a) Is it a malignant or a benign lesion; and if malignant is it primary or metastatic?

b) Is this lesion part of an undiagnosed generalized lipomatosis observed in some rare syndromes?

c) What is the best diagnostic and therapeutic procedure?

The distinction between lipoma and liposarcoma is sometimes difficult. Macroscopically benign tumors may contain sites of malignancy; a possibility that is directly related to the tumor dimensions. Transbronchial echo and TBNA may be proved helpful but do not eliminate the false negative results and conclude the risks of bleeding and dissemination of neoplastic cells while MRI seems to be superior to CT in differential diagnosis. For the above-mentioned reasons the bronchoscopic therapy should be reserved for pedicled masses where excisional biopsy is both diagnostic and therapeutic.