

Brief Report

Endobronchial Lipoma Associated With Destroyed Lobe

İbrahim Can Kürkçüoğlu, M.D.,* Atilla Eroğlu, M.D.,* Nurettin Karaoğlanoğlu, M.D.,*
Zekai Erman, M.D.,† and Leyla Sağlam, M.D.‡

Departments of *Thoracic Surgery, †Pathology, and ‡Chest Diseases, Atatürk University, School of Medicine, Erzurum, Turkey.

Abstract: Endobronchial lipomas are rare, benign lesions that usually obstruct a major bronchus and cause irreversible pulmonary damage distally. Endobronchial lipomas originate from fat cells located in the peribronchial tissue and occasionally the submucosal tissue of large bronchi and comprise only approximately 0.1% of all tumors and approximately 13% of benign pulmonary tumors. They may be diagnosed clinically as bronchial adenoma or malignant lesion, and the result of delayed

therapy may be bronchiectasis. Treatment includes local resection through a bronchoscope or a bronchotomy incision, or removal, if necessary, of the obstructed lobe or lung at thoracotomy. We report a case of an endobronchial lipoma treated successfully with lobectomy in a 42-year-old man.

Key Words: Lipoma—Bronchus—Lung.

Journal of Bronchology 9:27–29, 2002.

Endobronchial lipoma is a rare neoplasm, with 116 cases reported in the English literature to date. Literature data show that a correct preoperative diagnosis is possible in less than 50% of all patients and that a thoracotomy is mandatory in 85% of patients because bronchoscopic needle aspiration biopsy specimens or brushings rarely allow a definitive cytologic diagnosis.¹ We present a case that demonstrates clinical, diagnostic, and histopathologic findings in this disease.

CASE REPORT

A 42-year-old man presented with a 1-year history of recurrent pneumonia in the left upper lobe. He was a current smoker (20 pack-years), and his vital signs were normal. There were decreased breath sounds over the left posterior upper portion of the thorax. Chest radiography showed linear densities and ill-defined, irregular opacities in the upper lung. Computed tomographic scanning and tomographic studies showed multiple cystic spaces in the left upper lobe in which the volume was diminished (Fig. 1). Flexible bronchoscopy revealed a well-circumscribed, yellow tumor localized on the upper di-

vision of the upper lobe of the left lung (Fig. 2). Numerous attempts at biopsy were unsuccessful because of the mobility of the lesion and the presence of a tough, fibrous capsule. Several cytologic examinations of the sputum did not reveal any malignant cells, and culture of the sputum was negative. Preoperatively, an inflammatory polyp in association with chronic saccular bronchiectasis was suspected. A left posterolateral thoracotomy was performed. The left upper lobe bronchus was opened, and a smooth, yellow tumor was excised. Frozen sections of the tumor revealed benign fatty cells. Left upper lobectomy was performed because of destruction of the lobe resulting from recurrent pneumonia. Gross examination of the resected specimen showed a pedunculated polypoid mass attached to the bronchial mucosa, and saccular ectatic changes of bronchi. Microscopically, the endobronchial tumor was comprised chiefly of mature fatty tissue surrounded by respiratory epithelium. The submucosa contained a moderate number of chronic inflammatory cells (Fig. 3).

The patient had an uncomplicated postoperative course, was discharged 9 days after the operation, and was doing well at the 7-month follow-up.

DISCUSSION

Although lipomas are common, benign neoplasms of soft tissue, endobronchial lipoma is rare.^{2–4} Bronchial

Address reprint requests to Dr. İbrahim Can Kürkçüoğlu, Department of Thoracic Surgery, Medical Faculty, Atatürk University, 25000 Erzurum, Turkey; e-mail: cankurkuoglu@hotmail.com

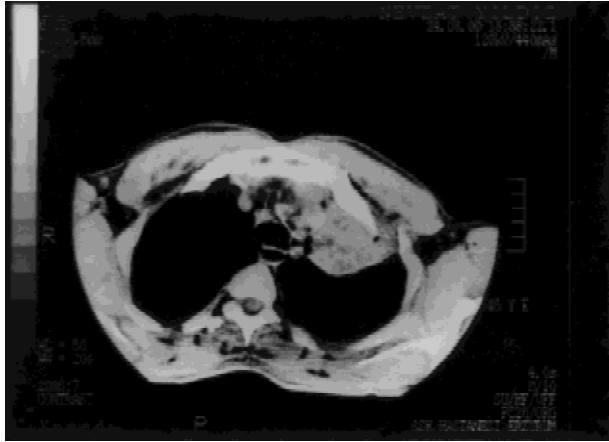


FIG. 1. Computed tomography shows multiple cystic spaces in the left upper lobe, in which the volume was diminished.

lipomas comprise approximately 0.1% of all pulmonary tumors and approximately 13% of benign tumors.^{5,6} The tumor is usually found in middle-age, obese men.⁵ Smoking may be important in the pathogenesis of this tumor.²

Endobronchial lipomas originate from fatty tissue that is normally present in the bronchial tree and consist mainly of histologically normal adult fat cells.^{1,3-6} They are pliable, measure 1 to 3 cm, and are often pedunculated. Lipomas may obstruct the bronchus partially or totally, producing varying degrees of obstructive atelectasis, bronchiectasis, and inflammatory change.²⁻⁴

Presenting symptoms are frequently those of bronchial

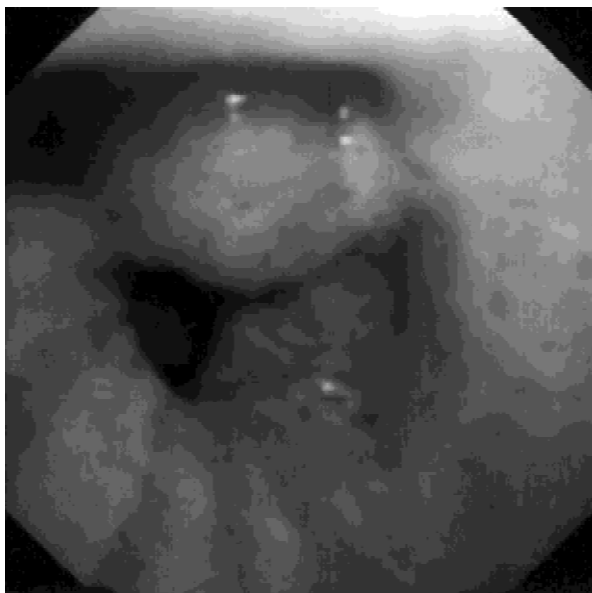


FIG. 2. Bronchoscopy demonstrates the tumor localized on the upper division of the upper lobe of the left lung.

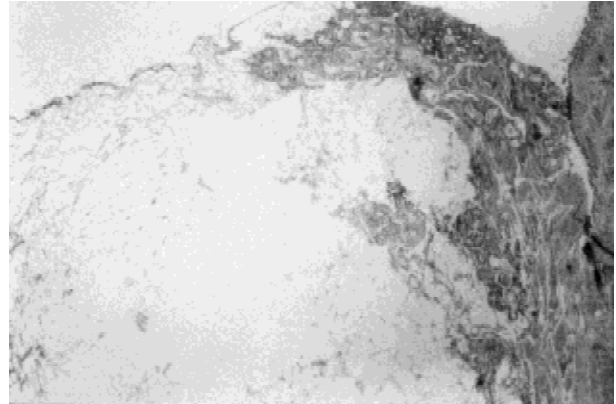


FIG. 3. Photomicrograph showing mature fat cells surrounded by respiratory epithelium. H&E, original magnification $\times 40$ before reduction.

obstruction (i.e., cough, sputum production, recurrent pneumonitis, dyspnea, and, rarely, hemoptysis).^{2,3,5} The symptoms depend primarily on the tumor's location and size. Duration of symptoms varies from a few weeks to more than 20 years.²

Radiographic changes are nonspecific and are related to an intrabronchial mass. Chest radiographs may show enlargement of the hilar shadow, because endobronchial lipomas are found more commonly in the large bronchi. In addition, changes secondary to bronchial obstruction, such as incomplete aeration or atelectasis and chronic bronchiectasis, may be noted.^{3,5} The computed tomographic findings of a homogeneous mass with fatty density and no tumor contrast enhancement are considered diagnostic.³ Magnetic resonance imaging also may be useful.

The capsule often renders bronchoscopic bronchial biopsy specimens nondiagnostic, and bronchial washings may include some epithelial cells because of the effects of chronic irritation, leading to an erroneous diagnosis of bronchogenic carcinoma.^{2,3,5} An endobronchial lipoma may be indistinguishable from a bronchial adenoma because of their similar appearance and their tendency to bleed during the bronchial biopsy.⁵

Because of their benign nature, endobronchial lipomas should be treated initially endoscopically.^{2,3,6} With early and complete removal, patient prognosis is excellent. There is little or no risk of malignant transformation and minimal risk of recurrence. If the tumor is destroyed, surgical resection has to be considered. Lobectomy and pneumonectomy have been performed in a majority of these cases, and only in a few instances were the masses excised by bronchotomy.^{2,3,5,6}

In our patient, biopsy specimens were insufficient for histologic diagnosis. Diagnostic thoracotomy and left up-

per lobectomy were performed to remove the destroyed lobe.

In conclusion, endobronchial lipomas are rare, benign tumors that can cause irreversible pulmonary damage unless removed early. Accurate and early diagnosis may obviate unnecessary thoracotomy and may prevent irreversible complications.

REFERENCES

1. Destito C, Romagnoli A, Carlucci I, et al. Endobronchial lipoma: endoscopic resection or surgical excision? Report of a case and review of the literature [in Italian]. *G Chir* 1995;16:445-7.
2. Farsad GR, Makoui C. Endobronchial lipoma. *Am Surg* 1981;47:236-8.
3. Mendelsohn SL, Fagelman D, Zwanger-Mendelsohn S. Endobronchial lipoma demonstrated by CT. *Radiology* 1983;148:790.
4. Dogan R, Unlu M, Gungen Y, et al. Endobronchial lipoma. *Thorac Cardiovasc Surg* 1988;36:241-3.
5. Schraufnagel DE, Morin JE, Wang NS. Endobronchial lipoma. *Chest* 1979;75:97-9.
6. Stey CA, Vogt P, Russi EW. Endobronchial lipomatous hamartoma: a rare cause of bronchial occlusion. *Chest* 1998;113:254-5.