
Endobronchial Lipoma: A Case Report

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SUMMARY

Endobronchial lipoma (EL) is a rare benign neoplasm that may cause irreversible pulmonary damage distally, and may be misdiagnosed clinically as a bronchial carcinoid or malignant tumor. They simulate malignant tumors, because of the age, sex and smoking history of the patients in whom they are found. Proper management is a 'must' in order to avoid serious and unnecessary complications of the lung.

We present a case of endobronchial lipoma, which is located in the right upper lobe bronchus, and diagnosed and treated by surgery.

Key Words: Endobronchial lipoma, lung tumors.

ÖZET

Endobronşiyal Lipom: Olgu Sunumu

Endobronşiyal lipom (EL) akciğer hasarı oluşturabilen benign nadir bir neoplazmdır. EL, klinikte bronşiyal karsinoid ya da malign tümörler ile karıştırılabilir. Özellikle orta yaş üzeri, sigara içen erkeklerde akciğer kanserleri ile karşılaşılır. Tedavinin amacı komplikasyonların önlenmesidir.

Cerrahi tedavi uygulanan sağ üst lob bronşu kaynaklı bir EL olgusunu sunuyoruz.

Anahtar Kelimeler: Endobronşiyal lipom, akciğer tümörleri.

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CASE REPORT

A 67-year-old man was admitted to our hospital with two-years of exertional dyspnea. He had also complaints of dry cough, and chest pain in the right posterior chest region for one month. He had been smoking 20 cigarettes per day in the last 30 years. He was given an antihypertensive medication for eight years. Physical examination was normal, except crackles on the right suprascapular fields. All of the laboratory data were normal. The blood gas analysis was as follows: PaO_2 74.6 mmHg, PaCO_2 35 mmHg, pH 7.40. Chest X-ray showed volume loss of right upper lobe; upward displacement of the minor fissure. Lung function test results showed moderate obstruction ($\text{FVC}= 72\%$, $\text{FEV}_1= 51\%$, $\text{FEV}_1/\text{FVC}= 56\%$). Carbonmonoxide diffusion test was normal. Sputum analysis was not compatible with tuberculosis or malignancy. Helical computerized tomography (CT) of thorax showed a soft tissue lesion occluding right upper lobe bronchus (density -113 HU) approximately 1 cm diameter, calcified lymph node smaller than 1 cm in the right hilum, with fibrosis and bronchiectasis in the right upper lobe (Figure 1). V/Q scan showed no perfusion and ventilation in the right upper lobe. Bronchoscopy showed a polypoid mass occluding right upper lobe bronchus, whose surface was smooth like normal bronchial mucosa, mobile with respiration and minimally protruding into lumen from right lateral wall of lower trachea (Figure 2). Biopsy was not taken from the polypoid mass because of risk

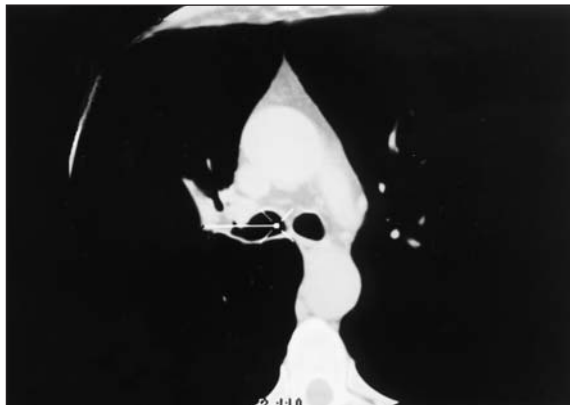


Figure 1. Helical thorax CT showed a soft tissue lesion, approximately 1 cm diameter occluding right upper lobe bronchus (density-113 HU),

of bleeding. However, bronchial mucosa biopsy was taken from the mucosal adjacent to polypoid mass and transtracheal fine needle aspiration from right lateral wall of lower trachea. Histopathology of bronchial mucosa biopsy revealed non-specific inflammation. Cytology of transtracheal fine needle aspiration was normal. Subsequently right thoracotomy was performed. The upper lobe was found to be partially atelectatic. A lobulated, pale, yellowish coloured mass, which was measured 1.5 cm in diameter was excised by means of bronchotomy. Pathological examination showed mature adipose tissue under the pseudostratified columnar bronchial epithelium and the case was diagnosed as endobronchial lipoma (EL) (Figure 3). The patient tolerated the surgery well and was discharged on the thirty postoperative day. After the operation, he has been well and completely symptom free. Control bronchoscopy was normal one month after surgery.

DISCUSSION

The first case of EL was described in 1854 by Rokitanski and the first published case was the one reported in 1927 by Kernan. Bronchial lipoma is a rare benign tumor (1). The incidence of bronchial lipoma among all pulmonary tumours is 0.1% and it constitutes 13% of benign tumors of the lung (2). Up to date, about 109 EL cases had been reported in international literature before 1989 (3). Endobronchial lipomas are usually found in adults of middle age. The age ran-



Figure 2. Bronchoscopy showed a polypoid mass occluding right upper lobe bronchus.

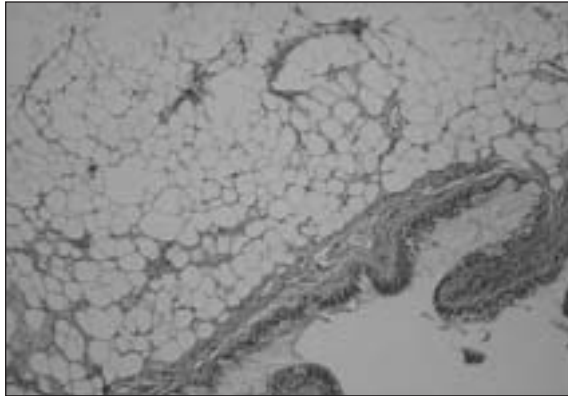


Figure 3. Mature fat tissue under the pseudostratified columnar bronchial epithelium.

ge is 29-85 years in the reported series, and there is a male predominance. The usual size of the endobronchial lipomas ranges from 1 to 3 cm in diameter. They are usually located within larger bronchi (1,2,4). Location of endobronchial lipomas does not show predominance for right or left lung (1-6).

The clinical symptoms of EL are due to obstruction in airways, which will depend on the length of time of evolution of the tumor and its rate of growth (1,2). The symptoms may include coughing, hemoptysis, wheezing, chest pain, purulent sputum and dyspnea (1,2,4,6,7). They can give rise to atelectasis, recurrent pneumonia and occasionally distal bronchiectasis (2-4). The duration of symptoms before diagnosis ranges from a few months to several years (1-5,7).

Endoscopically the tumor appears as a soft gray, yellowish, smooth surface mass that sometimes resists biopsy because of a firm capsule. Lipomas are mostly pedunculated, occasionally sessile and rarely dumbbell-shaped. Biopsy does not give rise to bleeding. The problem, however, is that a lipoma is bronchoscopically indistinguishable from bronchial carcinoid (4,7,8). We did not take bronchoscopic biopsy from endobronchial mass, because it was indistinguishable from a bronchial carcinoid. He underwent thoracotomy for diagnosis, and treatment.

Bronchial lipomas originate in fatty cells usually found in peribronchial tissue and occasionally

in the submucosa of the large bronchi (4,7). Endobronchial lipomas consist of mature adipose tissue, some fibrous components lined with normal bronchial epithelium, sometimes developing squamous metaplasia that is probably the result of chronic inflammation. Therefore, small biopsies can lead to diagnostic confusion. Other tissue such as glandular tissue or bone can be present, leading to the description of a hamartoma (2,4).

CT and MR are reported to be helpful in establishing the diagnosis by demonstrating a fatty tumor within the bronchial lumen (2). The CT findings of a homogeneous mass with fatty density and no tumor contrast enhancement are considered diagnostic (2,7,9). Helical CT is often superior to bronchoscopy for evaluation of these rare lesions. Accurate and early diagnosis using helical CT may obviate unnecessary thoracotomy and prevent irreversible complications (9). Several reports of MR appearance of lipoma have shown high signal intensity on proton density and T2-weighted images, compatible with normal fat (2,7). The helical CT scans of our case showed a fatty mass attenuation (-113 HU) that completely filled the lumen of the right main bronchus. However, this measurement was performed retrospectively from preoperative helical CT computer records, after the histopathology report had been obtained followed surgery. If density of this endobronchial mass had been evaluated, our case would have not undergone to surgery and would have been diagnosed and treated by bronchoscopically.

The treatment of endobronchial lipomas causing damage such as bronchiectasis or persistent atelectasis may necessitate segmentectomy, lobectomy or pneumonectomy (10). The treatment of these tumors has changed during the last few years. Because the diagnosis is made earlier by bronchoscopy and CT, conservative treatment is preferable in uncomplicated cases. Treatment modalities have include bronchoscopic removal techniques such as Nd-YAG or snare laser, electrocautery, forceps as well as thoracotomy included in excision of lipoma with bronchotomy or segmentectomy or lobectomy or pneumonectomy. When pulmonary compli-

cations are observed, surgery is considered (2,4,7,10). We could not diagnose preoperatively, because bronchotomy and excision of the mass. We did not take bronchoscopic biopsy due to suspicion of bronchial carcinoid. In addition, we thought the possibility of malignant tumor because of the age of our case, smoking history and volume loss of right upper lobe.

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