CASE REPORT

Pleural Empyema Associated With Endobronchial Lipoma

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Introduction

Endobronchial lipoma is an extremely rare benign neoplasm that may lead to irreversible lesions in the pulmonary parenchyma owing to recurrent obstructive pneumonia caused by the bronchial obstruction. Early diagnosis of endobronchial lipoma and radical treatment are essential for preventing permanent pulmonary lesions. Most patients present respiratory signs and symptoms, among which cough is the most frequent at diagnosis. Endoscopic laser resection is currently considered the treatment of choice according to most authors. However, if irreversible parenchymatous lesions occur, lung resection, lobectomy, and even pneumonectomy may be necessary. We report the case of a patient who presented with pulmonary atelectasis and empyema caused by Haemophilus influenzae infection and whose confirmed diagnosis was endobronchial lipoma.

Key words: Endobronchial lipoma. Empyema. Laser therapy.

Empiema pleural asociado a lipoma endobronquial

Los tumores benignos broncopulmonares representan menos del 4% de las neoplasias de origen pulmonar. El lipoma endobronquial es una neoplasia benigna extremadamente rara, cuya incidencia oscila entre el 0,1 y el 0,5% de todos los tumores del pulmón. Los síntomas clínicos dependen de su localización, del grado de obstrucción bronquial y de las consecuencias morfofuncionales de dicha obstrucción sobre el parénquima distal. La tomografía axial computarizada suele poner de manifiesto el contenido adiposo del tumor. Presentamos el caso clínico de un varón de 83 años diagnosticado de neumonía adquirida en la comunidad, que se complicó con un empiema pleural por Haemophilus influenzae y atelectasia de lóbulos medio e inferior derecho, secundaria a obstrucción endobronquial por lipoma. Se realizó extracción del lipoma bronquial mediante fotoresección con láser.

Palabras clave: Lipoma endobronquial. Empiema. Laserterapia.

Case Description

The patient was an active 83-year-old man who had been an ex-smoker for 40 years (40 pack-years). He had a history of surgery for prostatic adenoma in 1982, an episode of acute lithiasic pancreatitis that required hospitalization and later treatment by cholecystectomy in December 2003, and depressive syndrome under treatment with sertraline. The patient came to the emergency department of our hospital with a temperature of 39ºC, expectoration of thick mucus, and pleuritic chest pain. He was prescribed treatment with amoxicillin–clavulanic acid that resulted in partial improvement, so he abandoned the treatment at 4 days. A week later he returned to the emergency department because the symptoms returned. At physical examination the patient was feverish, normotensive, and slightly tachypneic at rest (20 breaths per minute). Auscultation revealed decreased breathing sounds at the base of the right lung. No other abnormalities were found during examination. Blood tests showed an elevated white cell count (21 120 cells/µL) with a left shift (87% neutrophils). Biochemistry showed glucose to be 319 mg/dL; total bilirubin, 1.8 mg/dL; fibrinogen, 1026 mg/100 mL; and urea, creatinine, and transaminases within normal parameters. Coagulation was normal. Basal arterial blood gas measurement showed partial respiratory insufficiency with pH at 7.37; PaO₂, 59 mm Hg; PaCO₂, 35 mm Hg, and oxygen saturation, 86%. A chest x-ray showed...
increased homogeneous density in the lower right hemithorax, indicating pleural effusion (Figure 1). Thoracentesis obtained a serosanguineous pleural fluid sample classified as an exudate with a pH of 7.15, a serum adenosine deaminase concentration of 33 IU/L, a red blood cell count of 120,000 cells/µL, and a white blood cell count of 2700 cells/µL (87% neutrophils). Gram-negative coccobacilli were observed. Treatment with amoxicillin–clavulanic acid and azithromycin was begun, and a chest tube was placed that drained only 100 mL of serosanguineous fluid in 48 hours. The pleural fluid grew biovar 1 *H influenzae* that was sensitive to amoxicillin–clavulanic acid, clarithromycin, and ciprofloxacin. A computed tomography (CT) scan performed after removal of the chest tube revealed a fat density lesion inside the right main bronchus, atelectasis of the right middle and lower lobes, and small pleural effusion (Figure 2). Exploration with a fiberoptic bronchoscope revealed a well-defined, glossy, smooth-surfaced, yellowish endobronchial lesion with sessile attachment on the medial face of the right main bronchus (Figure 3).
brushing results were negative for malignancy and a bronchial biopsy of the neoplasm yielded nonrepresentative material. Laser resection of the endobronchial neoplasm was performed by endoscopy with no complications. Pathology of the resected lesion confirmed the diagnosis of lipoma.

Discussion

An endobronchial lipoma is an extremely rare benign pulmonary tumor accounting for 0.1% to 0.5% of all pulmonary neoplasms. Such lipomas are more frequent in men and the incidence peaks in the fifth and sixth decades of life, the mean (SD) age of patients being 60 (11.4) years. In most cases in the literature, the tumor is located in the first 3 segments of the tracheobronchial tree and is more frequent on the right side—as in the present case, in which the tumor was in the right main bronchus. In reports, tumors vary in diameter from less than 1 cm to more than 7 cm, the mean diameter being 2 (1.5) cm.1,2

Endobronchial lipomas are usually round or oval, smooth-surfaced, yellowish, with narrow attachments, and coated with respiratory mucus. Microscopically they appear as an accumulation of adipocytes partitioned by mucus membrane. Cells have vascular stems, and the accumulation is covered with the ciliated epithelia of the respiratory tract. Some authors consider smoking a significant risk factor for developing endobronchial lipoma. In fact, in a recent review, Masashi et al1 reported finding 64 cases of lipoma published in Japan, 74% of which were in smokers. Obesity has also been suggested to be a risk factor, although that claim is disputed.

At diagnosis most patients present symptoms, the most frequent of which are—in order of presentation—productive cough, hemoptysis, fever, and dyspnea. For asymptomatic patients diagnosis is established as a consequence of chance findings in chest x-rays. The most frequent radiographic manifestation in such patients is either a parenchymatous consolidation due to lobular atelectasis or lung volume loss distal to the obstruction. Other less frequent radiographic findings are nodules and pulmonary consolidation and, even less frequent, pleural effusion. Our patient presented atelectasis of the right middle and lower lobes and exudative pleural effusion, the culture of which was productive cough, hemoptysis, fever, and dyspnea. Obesity has also been suggested to be a risk factor, although that claim is disputed.

Some authors have claimed that the finding of a homogeneous fatty density lesions in other locations. Bronchial biopsy and, lastly, when the results of endoscopic techniques are not conclusive, a CT scan of the chest is therefore an important diagnostic tool since it enables early diagnosis and avoids unnecessary thoracotomies.7 Some authors have claimed that the finding of a homogeneous adipose consolidation in a CT scan can be considered diagnostic.9,10

Surgical resection by thoracotomy (pneumonectomy, lobectomy, or tumor resection) has been used, although since the description of the first endoscopic surgical intervention in 1984,11 that technique has become the treatment of choice for bronchial lipoma. However, surgical resection by thoracotomy is indicated for the following situations: when a confirmed diagnosis is difficult to obtain by other techniques, when association with a malignant tumor is suspected, when peripheral lung destruction is present due to atelectasis and persisting pneumonias, when extrabronchial tumor growth is present and, lastly, when the results of endoscopic techniques point toward adverse consequences of multidirectional tumor growth.1

REFERENCES