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## Endobronchial Chondroid Hamartoma

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### ABSTRACT

*Hamartomas are benign lung tumors with an incidence of 0.025-0.32%. Endobronchial hamartoma is very rare. Only 1.4% of these tumors are endobronchial and the remaining are paranchymal. We report a 40-year-old man admitted for dyspnea and cough present for 8 years. He was a non-smoker and had been treated for asthma. Computed tomography of the lung showed a mass within the right main bronchus. Fiberoptic bronchoscopy showed translucent hyperaemic polypoid mass in the orifice of the right main bronchus. Microscopic examination of the specimen revealed chondroid hamartoma. Rigid bronchoscopy was performed for the patient and the lesion was removed by Nd: YAG laser. He recovered completely. (Tanaffos 2007; 6(3): 68-70)*

**Key words:** Chondroid hamartoma, Bronchi, Rigid bronchoscopy, Nd: YAG laser

### INTRODUCTION

The term "hamartoma" was coined by Albrecht (1) in 1904 to describe tumor-like malformations resulting from a presumptive developmental abnormality. In 1934, Goldsworthy (2) applied this term to benign lung tumors which were composed predominantly of a combination of fat and cartilage. Cytogenetic studies have identified chromosomal bands of recombination located at 6p21 and 14q24 positions which supports the theory that hamartomas represent mesenchymal clonal neoplasms (3).

Lung hamartomas are the most common form of benign lung tumors, with an incidence between 0.025% and 0.32% (4). In large clinical series of patients with lung hamartomas, most patients were

asymptomatic at the time of diagnosis, and the hamartoma was found via radiographic examination. Endobronchial hamartomas had a low frequency in all these studies, and their characteristics were poorly described.

### CASE REPORT

A 40-year-old man with an 8-year history of dyspnea, was referred to our hospital. His cough contained foamy viscous white sputum but he did not have hemoptysis or history of cigarette smoking. After diagnosis of asthma, the patient was treated with inhaled bronchodilators and oral steroids. No response was observed. He was also evaluated for cardiovascular problems the results of which were normal. On auscultation, right lung breath sounds were diminished. Consequently, chest x-ray and computed tomography (CT) scan of the lungs were obtained which showed a mass within the right main bronchus (Figure 1). Bronchoscopy was performed

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for the patient which showed a translucent hyperemic polypoid mass in the orifice of the right main bronchus resulting in 80% occlusion (Figure 2). Biopsy was obtained from the specimen and sent for pathological examination. Macroscopic examination showed multiple milk-white tissues (1.5x1.5cm). Microscopically, polypoid tissue surrounded by ciliated pseudocuboidal epithelium with cartilaginous islands accompanied by fat tissue were detected in the underlying stroma. The stroma was composed of vascular connective tissue infiltrated by lymphoplasmacytes and diverse neutrophils. Our patient underwent rigid bronchoscopy as well as laser therapy and his endobronchial tumor was removed. He remarkably improved afterwards.



Figure 1. CT-Scan of patient.

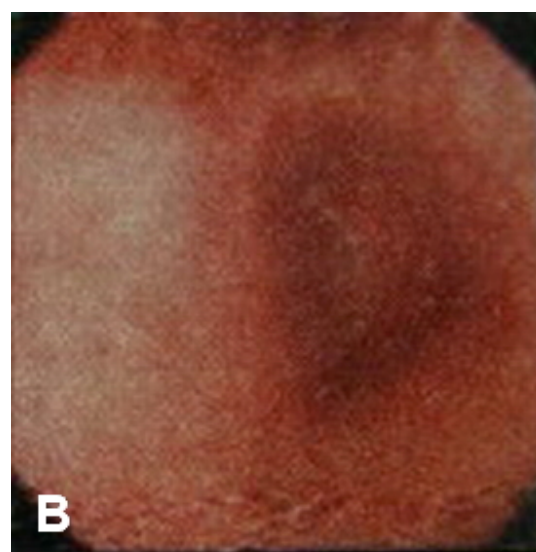
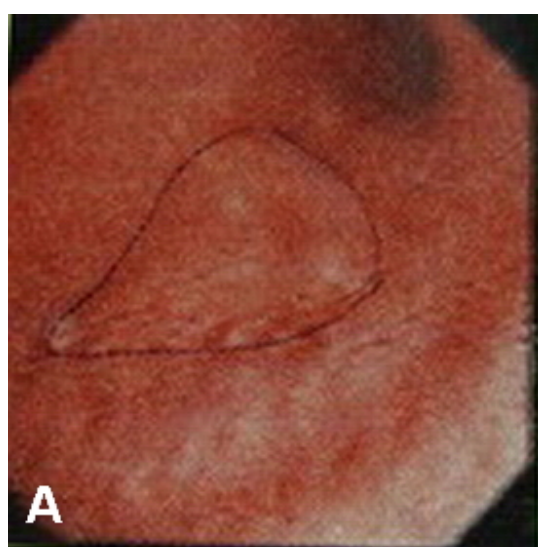


Figure 2. (A) Right main bronchus was occluded with mass and (B) RMB was opened after laser WNL.

## DISCUSSION

Lung hamartoma is a benign neoplasm with a low risk for developing malignancy. Furthermore, the recurrence rate after treatment is low. In most cases, the tumor is located intrapulmonary and endobronchial location is a rare occurrence (5).

Leroux reported 3000 patients with lung carcinomas, 40 with bronchial adenomas and 27 with lung hamartomas of which only 8% were endobronchial hamartomas (6). In the largest published series of pulmonary hamartomas, Gjevre et al. (7) analyzed 215 cases of hamartomas, of which only 1.4% were located endobronchially.

Most patients are males between the sixth and seventh decades of life (5). Pulmonary hamartoma is usually asymptomatic and an incidental finding on a chest x-ray obtained for other reasons (5). On the other hand, endobronchial hamartoma is often symptomatic and the most common complaints of patients are hemoptysis and obstructive pneumonia. Sometimes the patients present with dyspnea, cough and wheezing. Therefore, the diagnosis of asthma is often made mistakenly (8).

One of the rare findings of spirometry in

unilateral bronchial obstruction is biphasic evacuation patterns on the "volume-flow" curve. This pattern is induced by differences in evacuation times of both bronchi (9). Our patient had this pattern on his spirometry test which helped in diagnosis.

Chest x-ray and lung CT-scan in endobronchial hamartomas show endobronchial space-occupying lesions, collapse, obstructive pneumonia and air entrapment within the lungs (10). Lung CT scan of our patient showed a mass in the orifice of the right main bronchus which caused air entrapment in the right lung.

The best method of diagnosis is bronchoscopy and biopsy of the lesion (5) which was also done in our patient and diagnosed subsequently. The management of endobronchial hamartoma must be individualized according to the characteristics of each patient and the location of the tumor. In our experience, endoscopic treatment with rigid bronchoscopy and laser therapy is the best therapeutic choice. This technique leads to the control of symptoms and avoids the risk of thoracotomy.

## CONCLUSION

Patients presenting with clinical symptoms of asthma not responding to standard treatment may have a space-occupying lesion. However, endobronchial chondroid hamartoma is rare but should be considered in differential diagnoses

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