

# Intrapulmonary Bronchogenic Cyst Presenting with Haemoptysis

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## Summary

A 36-year-old man presented with haemoptysis and his admission chest radiograph showed a large thin walled cystic lesion with an air-fluid level in the left lower lobe. The pathological diagnosis of the lesion, which was removed by a left lower lobe resection, was an intrapulmonary bronchogenic cyst.

**Key Words:** Bronchogenic cyst, Haemoptysis

## Introduction

Bronchogenic cysts which usually arise in close proximity to the trachea, major bronchi or oesophagus, may be found within the lung parenchyma in 25% of cases<sup>1</sup>. Most bronchogenic cysts are asymptomatic in adults. Compared to bronchogenic cysts which are situated in the mediastinum, intrapulmonary bronchogenic cysts are more likely to communicate with the tracheobronchial tree in which case the chest radiograph may show an air-fluid level<sup>1,2,3</sup>. Bronchogenic cysts which are located within the lung parenchyma are therefore more prone to infectious complications and are more likely to be associated with haemoptysis. A case of left lower lobe intrapulmonary bronchogenic cyst in a young adult who presented with haemoptysis and whose chest radiograph showed a large cystic lesion with an air-fluid level is described.

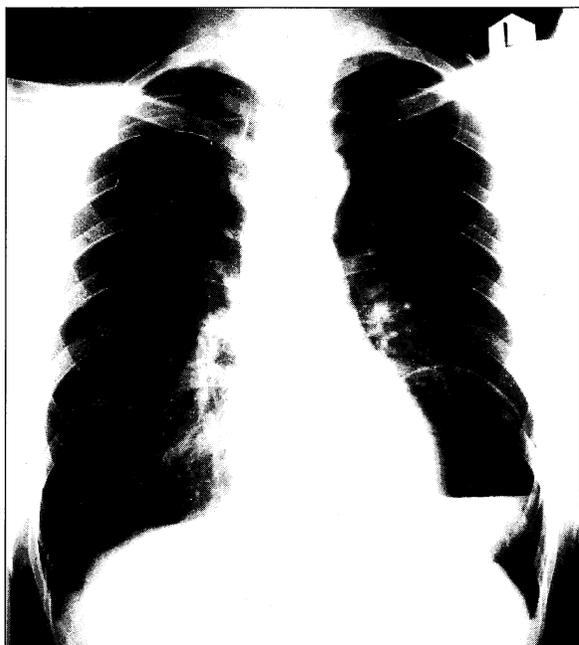
## Case Report

A 36-year-old man presented with cough and haemoptysis associated with central chest pain on the day of admission. He was afebrile and there were no other constitutional symptoms. He was a chronic cigarette smoker but did not have any chronic respiratory symptoms before. He did not have any

previous chest radiographs. General examination was normal. Examination of the chest revealed reduced breath sound intensity and the presence of crepitations over the left base. The rest of the physical examination was normal.

The admission chest radiograph showed a large thin walled cystic lesion in the left lower lung field with an air-fluid level (Figure 1). Blood investigations revealed normal leucocyte and platelet counts. The coagulation profile was normal. Computed tomography (CT) of the chest showed a large septate cyst with an air-fluid level in the left lower lobe. The CT number of the fluid was 12 Hounsfield units.

He underwent a left posterolateral thoracotomy during which a large cystic lesion measuring 10 x 10 x 8 cm was found to occupy almost the entire left lower lobe. A left lower lobectomy was performed. His post-operative recovery was uneventful. The pathological diagnosis was an intrapulmonary bronchogenic cyst. The histological sections showed that the cyst wall was lined by ciliated columnar epithelium. No cartilage was identified. Focal areas of haemorrhage were present in the cyst wall. There was no evidence of infection.



**Fig. 1. Chest radiograph showing a large cystic lesion with an air-fluid level in left lower lung field.**

### Discussion

Bronchogenic cysts are considered to result from a defect in lung budding during the course of bronchial development from the ventral portion of the primitive foregut. Although they usually arise in close proximity to the tracheobronchial tree, and are therefore located in the mediastinum; they may be found within the pulmonary parenchyma, as in this patient, in 25% of cases<sup>1</sup>.

Bronchogenic cysts are usually spherical and can be up to 10 cm in diameter<sup>2</sup>. They are usually thin walled and filled with mucoid material. Histologically, the

walls consist of fibrous tissue and normal bronchial components, i.e. epithelial lining, smooth muscle and cartilage plates<sup>3</sup>.

On chest radiograph, bronchogenic cysts appear as a smooth oval or round homogenous density in close proximity to the major airways<sup>1</sup>. When they communicate with the tracheobronchial tree, like in this patient, the chest radiograph may show an air-fluid level<sup>3</sup>. It may be difficult to differentiate a bronchogenic cyst that communicates with the airway from a post inflammatory lung abscess by plain chest radiograph. However, the presence of a lining of ciliated columnar epithelium with cartilage and smooth muscle within the wall of these communicating cysts is accepted as evidence of a congenital bronchogenic cyst. Computed tomography confirms its cystic nature with low Hounsfield units and is useful in mapping the exact extent of the lesion and its anatomical relationship to the tracheobronchial tree<sup>3</sup>.

While mediastinal bronchogenic cysts rarely communicate with the tracheobronchial tree; intraparenchymal cysts are more likely to do so and are therefore more prone to infections<sup>1</sup>. Haemoptysis, as seen in this patient, is also more commonly associated with bronchogenic cysts located within the lung parenchyma than the mediastinal variety.

Intrapulmonary bronchogenic cysts should be removed because of the higher incidence of infectious complications and also because the distinction from a lung carcinoma with cavitation or a cystic component may be difficult<sup>2</sup>. The operative approach is usually that of a posterolateral thoracotomy and removal of the majority of intrapulmonary bronchogenic cysts necessitates a lobectomy although this can be accomplished by limited resection in some cases.

### References

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