

## Paraesophageal bronchogenic cyst mimicking oesophageal tumour

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### Abstract

Bronchogenic cysts are congenital lesions result from abnormal budding of the ventral foregut and depending on the timing of abnormal development cysts may locate within the mediastinum or lung parenchyma. In the case which the density of the cyst is higher it is possible to different the cyst from the tumoural pathology. In our case report we present a bronchogenic cyst mimicking tumoural pathology. It is always suggested to total removal of the cyst to treatment.

### Case report

A 27-year-old female patient applied to our clinic for advanced examinations and therapy, following the detection of a mass in her left lung on a PA-chest X-ray which was obtained at an outpatient clinic which she had applied 2 weeks prior, with the complaint of haemoptysis. The patient did not have an ongoing complaint at the time of her application. Her physical examination did not reveal any specific findings. Her blood count and biochemistry results were within normal limits.

**Figure 1. Coronal contrast-enhanced CT of the thorax showed a paraesophageal soft tissue mass at the lower lobe of the left lung**



**Figure 2. CT scan (mediastinal window settings) shows a well-circumscribed about 35 Hounsfield unit (HU) attenuation cyst in the left lower zone and with thin, enhancing wall within punctate calcification**



At contrast-enhanced CT (computed tomography) of the thorax, a paraesophageal soft tissue mass at the lower lobe of the left lung was found (Figure 1). The lesion contained calcifications and had rather regular contours which could not be clearly discriminated from those of the oesophagus (Figure 2).

The lesion was assumed to be either a soft tissue tumour originating from the oesophagus, or a bronchogenic cyst, and an operation was planned thereafter. The mass was totally excised by performing a left thoracotomy. Pathological examinations revealed a bronchogenic cyst. The patient was discharged from the hospital at the ninth postoperative day.

## Discussion

Bronchogenic cysts are congenital lesions thought to result from abnormal budding of the ventral foregut that occurs between the 26th and 40th days of gestation.<sup>1</sup> Depending on the timing of abnormal development, cysts may locate within the mediastinum or lung parenchyma. Otherwise, they are found in the pericardium, pleura, cervical area, or abdomen.<sup>2</sup>

Bronchogenic cysts have a wide variety of clinical and radiologic manifestations. These cysts are commonly asymptomatic in adults until there is enlargement secondary to infection or haemorrhage and are discovered incidentally on chest radiographs. However, some cysts may cause symptoms due to compression of surrounding organs such as the oesophagus, bronchi and heart.<sup>3</sup>

Airway compression of the elastic tracheobronchial tree in infancy and early childhood often leads to symptoms and rarely life-threatening complications.<sup>1</sup> A variety of conditions are considered in the differential diagnosis of bronchogenic cysts. The differential diagnosis includes other cysts of foregut origin, enteric-oesophageal and neuroenteric cysts, pericardial cysts and masses of thymic origin, thymomas and thymic cysts.<sup>1</sup> Other benign possibilities are benign lymphadenopathy, extension of a cervical goitre into the mediastinum and vascular lesions.<sup>4</sup>

Endoscopic ultrasound (EUS) is used to detect and delineate the extent of lesions in the gastrointestinal tract especially for oesophageal wall lesions. EUS-guided fine-needle aspiration (FNA) has added a new dimension to the capabilities of EUS because it permits characterisation of the lesion. For cytologic diagnosis, endoscopic brushing is a useful modality for the detection of surface lesions; however, this modality is not useful for the diagnosis of submucosal lesions.<sup>5</sup>

Computed tomography or magnetic resonance imaging useful modalities so as to complete the evaluation for bronchogenic cyst and other differential diagnosis. The CT scan is the investigation of choice as it can demonstrate the size, location and morphology of the cyst.

At computed tomography, bronchogenic cysts typically manifest as spherical masses of either water or soft-tissue attenuation. However, if they are infected, or if the protein content is high, they will appear much denser.<sup>2</sup>

In our case the lesion showed a CT density of about 35 HU. This feature, which may sometimes cause misdiagnosis as a solid tumour, like our case. Eventually in all cases, the definitive diagnosis is through histological examination of a biopsy specimen or

after surgery. It is usually suggested that asymptomatic cysts in young patients be removed, because of the low surgical risk and the potential risk of complications such as infection, haemorrhage, or neoplasia within the cyst.<sup>3</sup>

Surgical excision remains the treatment of choice. This is usually done by means of a posterolateral thoracotomy or median sternotomy.<sup>3</sup> Total excision of bronchogenic cysts is usually achievable, and is considered essential to prevent recurrences. When this is not possible, ablation of the epithelial layer should be performed by removal of the cystic mucosa or electrocoagulation.<sup>6</sup>

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