

# The Localization Of Bronchogenic Cyst Away From Mediastinum

G Findik, E Cakir, D Kahraman, S Kaya

## Citation

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## Abstract

Bronchogenic cysts (BC), occur until gestational 6<sup>th</sup> weeks from abnormal budding of trachea. They are generally situated in mediastinum and parenchyma of the lungs. Extrathoracic localizations, although uncommon, are neck, abdomen and subcutaneous areas. Substernal-subcutaneous settlement of bronchogenic cysts is reported very rarely in literature. In our case; 15 years old boy suffering only from right sided chest pain. The chest X-ray showed a circular lesion nearby the hilar region of right lung. This case is the rarely place bronchogenic cyst localized on intrathoracic area that is away from mediastinum and lung. Its treatment is surgical excision on diagnosis.

## INTRODUCTION

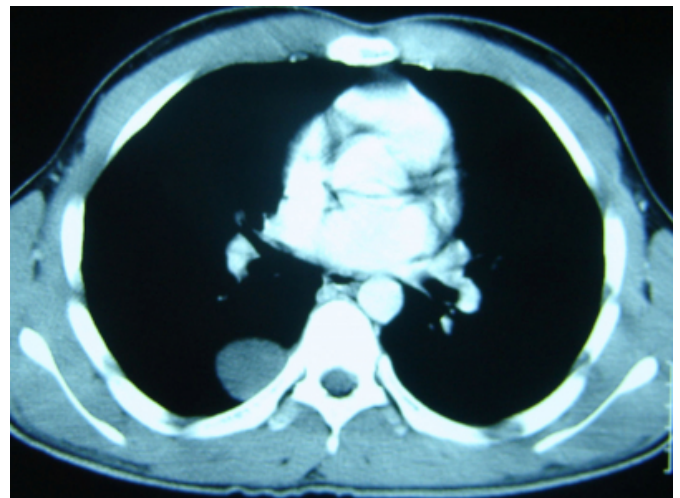
Throughout gestational 4<sup>th</sup> and 6<sup>th</sup> week ventral wall of anterior gut differentiate to form primitive respiratory system. Any abnormal movement of this budding causes formation of BC. The closer abnormal movement to 4<sup>th</sup> week, the more distant localization of the cyst from lung parenchyma. After 6<sup>th</sup> gestational weeks, abnormal differentiation causes cyst to be localized in to lung parenchyma and tracheo-bronchial system.

## CASE REPORT

A 15 years old boy suffering only from right sided chest pain for 3 months applied to thoracic surgery clinic. Physical examination was completely normal. After a chest X-ray we show a circular lesion nearby the hilar region of right lung, posterior to shadow of the heart. Computerized tomography revealed that a cystic mass was localized to subpleural region of posterior chest wall about the level of superior margin of right inferior lung (figure 1).

## Figure 1

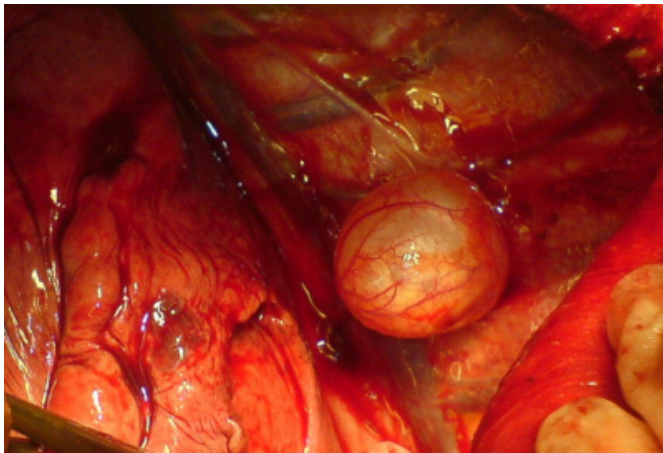
Figure 1: Computerized tomography revealed that a cystic mass was localized on intrathoracic area that is away from mediastinum and lung.



Patient was operated with the diagnosis of space occupying intrathoracic cystic lesion and cyst was excised totally through right lateral thoracotomy (figure 2).

**Figure 2**

Figure 2: intraoperative view of bronchogenic cyst



Well demarcated and capsulated 3x3x3 cm cyst was excised totally without remaining cystic mass from posterior chest wall (figure3).

**Figure 3**

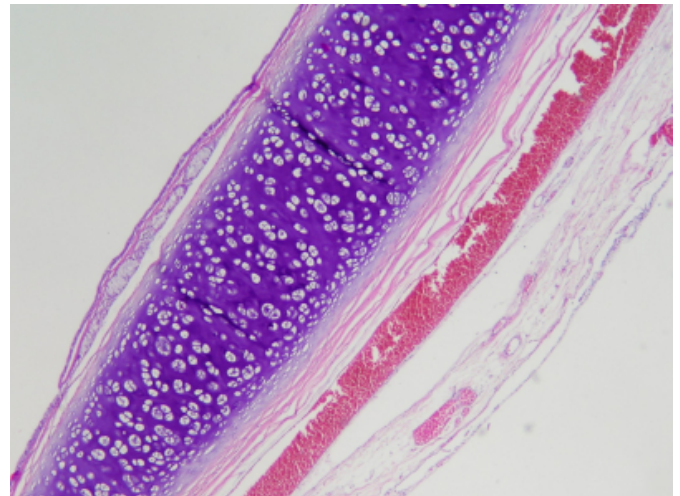
Figure 3: Well demarcated and capsulated 3x3x3 cm cyst



Drains were removed at postoperative 3<sup>th</sup> day and pathologic examination was reported as BC (Figure 4).

**Figure 4**

Figure 4: microscopic view of bronchogenic cyst



## **DISCUSSION**

Bronchogenic Cyst is a congenital anomaly, which is most commonly localized in lungs and mediastinum. Typical intrathoracic localizations are paratracheal area, carina of trachea, lung hilus and paraesophageal area[<sub>1</sub>]. Very rarely, this kind of cyst can be seen in subcutaneous tissue of neck, supraclavicular region, pericardium and diaphragm. We could not find any case in English literature reporting bronchogenic cyst localized on intrathoracic area that is away from mediastinum and lung.

Some patients are asymptomatic (% 35-56)[<sub>2,3</sub>]. Remaining patients suffer non-specific symptoms. In general, chest pain, cough, dyspnea and dysphagia if it is localized paraesophageal region are common complaints. According to Patel and colleagues, Bronchogenic Cysts may remain asymptomatic till they become complicated. Complications may include infection, occlusion of superior vena cava, pneumothorax, pleural effusion, arrhythmia and carcinomatous changes[<sub>4</sub>]. Complications vary according to localization.

Preoperative diagnostic techniques include chest x-ray, computerized tomography and magnetic resonance imaging. Using these techniques, it may be beneficial to measure density of fluid in non-complicated cysts. Possible elevation of calcium and protein levels in complicated cyst fluid may lead to mismeasurement of fluid density[<sub>3</sub>]. Metastatic tumor, lymphoma, embryogenic sarcoma, lymphadenopathy, pulmonary sequestration, pharyngeal cysts, granuloma, vascular anomalies, lung abscess, bullous infections and hydatid cyst must be kept in mind for differential diagnosis. Fiberoptic bronchoscopy is important for cysts which

develop after 6<sup>th</sup> week and localized in lung paranchyme. Demonstration of bronchial connection to the cyst facilitates preoperative diagnosis. There is some reports in literature suggesting that plasma CA19-9 and sialyl lewis X antigen levels increase in patients with BC[5].

Treatment of BC is surgical [6]. Video assisted thoroscopic surgery (VATS) is useful in elective patients. Easily accessible and non-adherent cysts may be removed with VATS technique. However, classical surgical excision with thoracotomy is preferred for BC adherent to surrounding tissues. To prevent recurrence, all epithelial structures of the cyst wall must be removed. If total excision of cyst is prone to complicate surrounding vital organs, it can be excised partially and remaining epithelial cyst wall is destructed by using electrocotery. In our case cyst is removed totally from thoracic wall without any complication.

### **CONCLUSION**

Although very rare, BC may localize outside of mediastinum and lung. This characteristic of BC must be kept in mind for differential diagnosis. They are usually benign lesions. But, because of comparably malign characteristic of other

resembling lesion, BC is excised surgically for differential diagnosis and to prevent complications.

### **CORRESPONDENCE TO**

Gokturk Findik Department of Thoracic Surgery, Ataturk Chest Diseases and Chest Surgery Education and Research Hospital, 06096 Ankara, Turkey Tlf: +903123552110 Fax: +903123552135 Email: gokturkfindik@hotmail.com

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**Author Information**

**Gokturk Findik, MD**

Department of Thoracic Surgery, Ataturk Chest Diseases and Chest Surgery Education and Research Hospital

**Ebru Cakir**

Department of Pathology, Ataturk Chest Diseases and Chest Surgery Education and Research Hospital

**Dogan Kahraman**

Department Of Thoracic Surgery

**Sadi Kaya, MD**

Department of Thoracic Surgery, Ataturk Chest Diseases and Chest Surgery Education and Research Hospital