

BRONCHOGENIC CYST IN A 14-MONTH OLD BOY*

(A Case Report)

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SUMMARY: Altın MA, Gündoğdu ZH, Şenel Z. (Departments of Pediatric Surgery and Pathology, Numune Hospital, Ankara, Turkey). Bronchogenic cyst in a 14-month-old boy: a case report. Turk J Pediatr 34: 187-191, 1992.

A patient with a bronchogenic cyst in the mediastinum is presented. This rare cyst was found by chance in a 14-month-old boy suffering from respiratory distress due to partial compression of a bronchus. Ultrasonographic and tomographic examinations revealed a cystic mass measuring 3 × 3 cm in diameter located within the apex of the right lobe of the lung. Bronchogenic cyst should be considered when these signs present in early childhood. Key words: bronchogenic cyst, postero-medial cysts of the mediastinum.

Childhood mediastinal cysts are most often classified as bronchogenic, dermoid, enterogenous, pericardial and nonspecific malformations.¹ Although the bronchogenic cyst is a rare thoracic mass, it should nevertheless be considered in the differential diagnosis of other mediastinal masses. This report is of an infant with a histologically-diagnosed bronchogenic cyst which caused respiratory distress.

Case Report

A 14-month-old boy was transferred to the Pediatric Surgery Clinic of Numune Hospital for evaluation of a posterior mediastinal mass. The parents noticed that the child was irritable, exhibited respiratory distress, and had intermittent episodes of cyanosis. Physical examination on admission revealed a child with a sad expression who was tachypneic and had mild shortness of breath, but displayed no labored respiration or cyanosis. Examination of the chest revealed nothing abnormal. The remainder of the physical examination was unremarkable. Roentgenography examination revealed a posteroanterior mediastinal soft tissue mass projecting to the right and measuring 3×3 cm (Fig. 1). Ultrasonography of the thorax showed a hypoechoic, cystic mass measuring 3×3 cm within the apex of the right lobe of the lung. These findings were confirmed by computerized tomography (Fig. 2). The barium swallow esophagogram was normal. The following diagnostic possibilities were considered: mediastinal cyst of foregut

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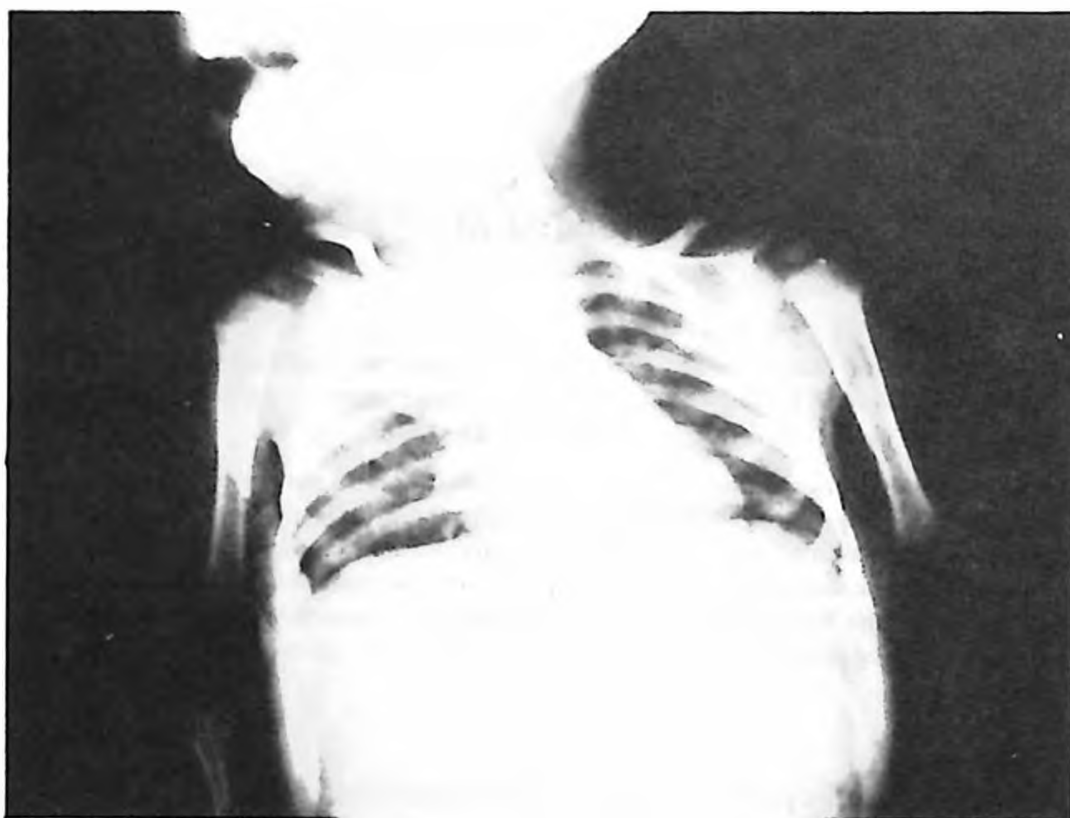


Fig. 1: Plain chest radiogram on admission.



Fig. 2: Computerized tomography demonstrating a cystic mass measuring 3×3 cm located within the apex of the right lobe of the lung.

origin; anterior meningocele, and a neurogenic tumor. In regard to the above-mentioned possibilities, a surgical procedure was performed which consisted of a right posterolateral thoracotomy incision made through the fourth intercostal space. A rather large, round, well-circumscribed mass was present in the posterior mediastinum. By the extraperitoneal route, the cystic mass was freed and totally excised. A chest tube was inserted, and routine closure of the thoracotomy incision was performed.

The postoperative course of the patient was uneventful. The chest tube was removed on the second postoperative day. No respiratory embarrassment was encountered, and on the third postoperative day, the chest X-ray showed complete expansion of the lungs.

Histopathological examination demonstrated ciliated, single cell columnar epithelium. The wall consisted of fibrous tissue devoid of cartilage and mucous glands (Fig. 3).

On follow-up three months later, the infant was well and symptom-free. Computerized tomography showed a normal lung.

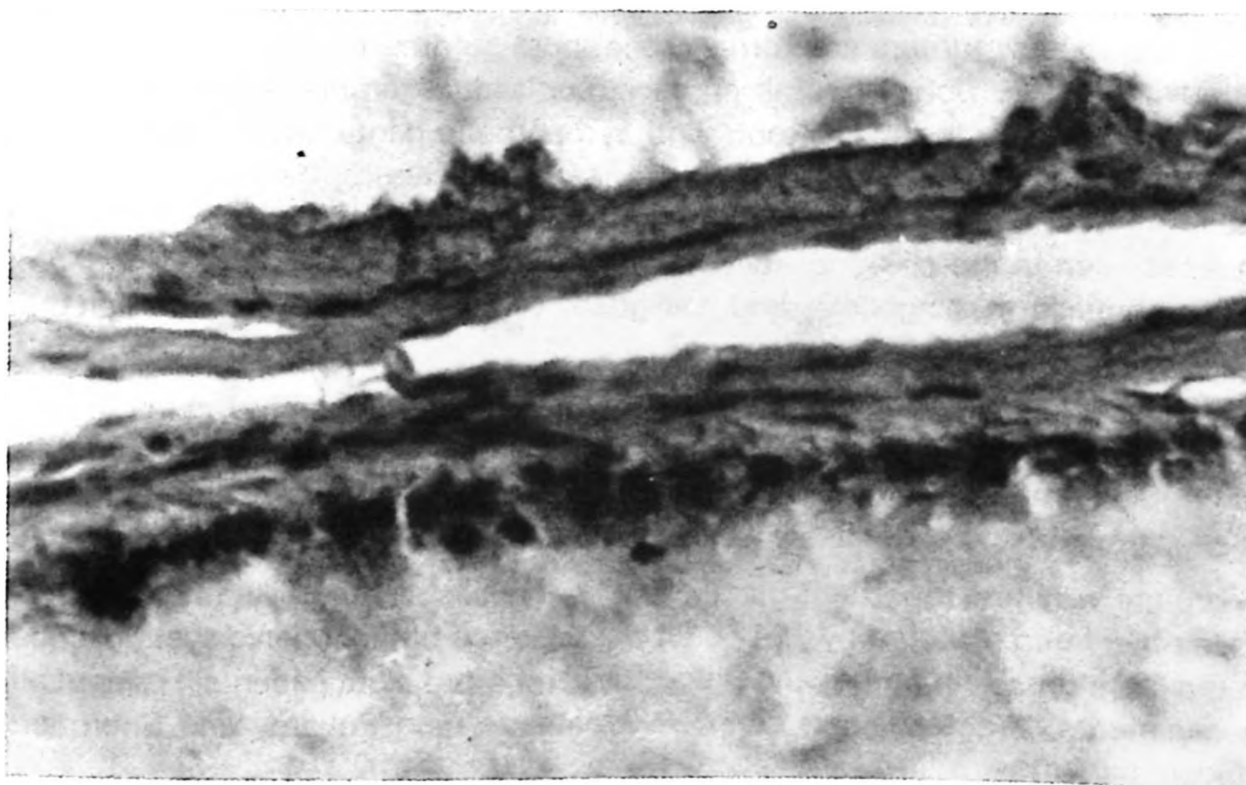


Fig. 3: Histopathologic examination of the bronchogenic cyst demonstrates dilated, single cell columnar epithelium. The wall consists of fibrous tissue devoid of cartilage and mucous glands (HE $\times$ 100).

Discussion

Bronchogenic cysts may occur in any portion of the mediastinum, but are most often seen near the carina in the middle part of the mediastinum.² Although these cysts frequently produce symptoms in young children causing respiratory embarrassment and an increased susceptibility to infection, as was the case in our patient, in adults, most cysts do not cause significant symptoms³.

Bronchogenic cysts arise from budding of the respiratory epithelium of the developing lung bud, and again are characterized by their position rather than by the presence of ciliated respiratory epithelium and bronchial elements such as cartilage in the walls. They are situated either within the lung or, as is more usual, in association with main bronchi, and they may or may not communicate with bronchial lumen⁴. Cysts with identical histologic findings are found peripheral to, or even completely separate from the lung. These lesions are more properly termed "lung cysts" as a means of distinguishing them from cysts that are adherent to the main airway. The histologic similarity of these cysts is not surprising, since all of them are derived from the ventral or anterior primitive foregut⁵.

A number of benign and malignant tumors are found in the posterior mediastinum. Neurogenic tumors are some of the most common tumors, accounting for approximately 20 percent of all primary mediastinal tumors and cysts⁶. These lesions arise from the nerve roots and sympathetic ganglia in the paravertebral sulcus. The types seen are neuroblastomas, ganglioneuroblastomas, neurilemmomas, neurofibromas, ganglioneuromas and pheochromocytomas. The other masses seen in the posterior mediastinum are bronchogenic and enterogenous cysts, thoracic meningocele, and malignant tumors such as Ewing's sarcoma, lymphoma, and rhabdomyosarcoma⁷.

The mass is usually discovered during routine chest radiographs, as in our case. Tomography, barium swallow, fluoroscopy, ultrasonography and computerized tomography may be helpful in localizing and identifying mediastinal tumors. In all cases, however, the definitive diagnosis has to await histologic examination.⁸

There are very few reports of this type of cyst published in the literature. Only 76 cases had been reported by 1947⁹. Of the cases of bronchogenic cyst described in the literature, Heimbürger and Battersby¹⁰ reported eight patients, Haller et al¹¹ two patients, Whittaker and Lynn³ five patients, and Pokorny and Sherman¹² eleven patients.

All patients who underwent excision of the cyst, and were followed up, showed no complications, as was the case in our patient^{13,14}.

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