Giant parenchymal bronchogenic cyst mimicking hydropneumothorax

Ahmet Basoglu, MD, Burcin Celik, MD, and Aysen Taslak Sengul, MD, Samsun, Turkey

Bronchogenic cysts are believed to result from abnormal budding of the tracheal diverticulum between the third and sixth weeks of gestation and consequently may be mediastinal or intrapulmonary in location.[1,2]

In the adult, bronchogenic cysts are frequently asymptomatic and present as an incidental finding in the chest roentgenogram.[1-3] We present a patient with a giant parenchymal bronchogenic cyst that appeared as hydropneumothorax on chest radiograph and CT. The unusual cause and the interesting clinical course of asymptomatic bronchogenic cyst are described.

Clinical Summary

A 66-year-old asymptomatic man was found to have a hydropneumothorax on routine chest radiograph for operation of retina decolman (Figure 1). A left tube thoracostomy was performed. Despite tube thoracostomy suction, there was not an air leak, and the chest radiograph showed no pulmonary expansion. Chest CT scan revealed a hydropneumothorax in the left hemithorax (Figure 2). Through a left posterolateral, muscle-sparing thoracotomy, a thin-walled cyst, 18 × 14 cm in diameter with clear fluid, was observed in the upper lobe parenchyma. There was a communication with the tracheobronchial tree, and the cyst was removed completely. The postoperative course was uncomplicated, and the patient was discharged on day 6 and was asymptomatic at the 14-month follow-up. Histopathologic examination showed a cyst lined by pseudostratified respiratory epithelium with only a thin membranous underlining. This histologic feature led to the diagnosis of bronchogenic cyst.

Discussion

Bronchogenic cysts account for approximately 5% to 10% of all primary mediastinal masses.[4,5] They are found most frequently along the tracheobronchial tree in the mediastinum or within the lung parenchyma.[2] Rarely, the cysts have occurred in other locations, including cutaneous and subcutaneous tissues, neck, pericardium, diaphragm, abdomen, and the intramedullary part of the spine.[6]

Maier[7] categorized bronchogenic cysts into 5 groups according to their location: paratracheal, carinal, hilar, paraesophageal, and miscellaneous. The paratracheal, carinal, and hilar groups are usually asymptomatic.[5,6] Histopathologically, they are thin-walled masses lined with ciliated respiratory epithelium containing cartilage and bronchial glands. Typically, bronchogenic cysts are smooth and spherical, ranging from 2 to 12 cm in diameter.[2,3] In the patient presented here, there was an asymptomatic, giant bronchogenic cyst (18 × 14 cm in diameter) in the upper lobe parenchyma.

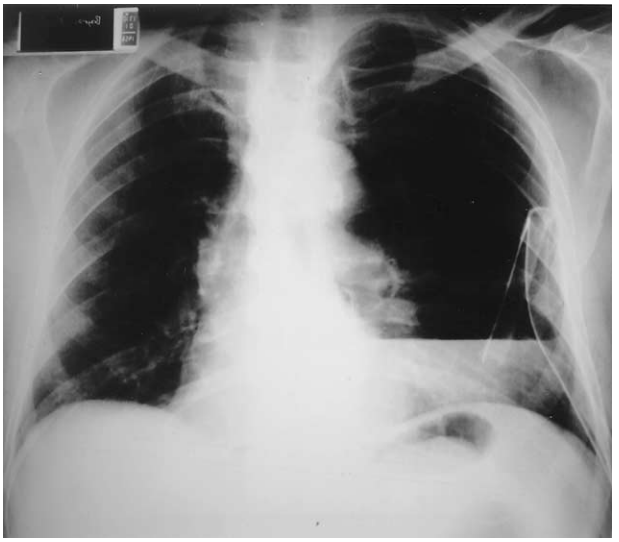

Figure 1. Preoperative chest radiograph.

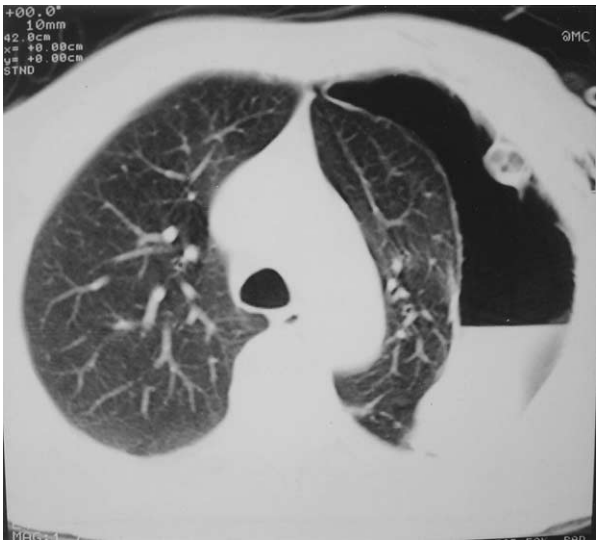

Figure 2. Preoperative chest CT.

From the Ondokuz Mayıs Unıversıty, Medical School, Department of Thoracic Surgery, Samsun, Turkey.

Received for publication Jan 21, 2003; accepted for publication April 1, 2003.

Address for reprints: Ahmet Basoglu, Ondokuz Mayıs Unıversıty, Medical School, Department of Thoracic Surgery, Samsun, Turkey (E-mail: ahmetb@omu.edu.tr).

J Thorac Cardiovasc Surg 2003;126:1201-2

0022-5223/2003 $30.00 + 0

doi:10.1016/S0022-5223(03)00752-9

Most reported bronchogenic cysts have occurred in pediatric-aged patients, in whom they are often seen in life-threatening emergencies with airway obstruction resulting in atelectasis, air trapping, and respiratory distress. Many bronchogenic cysts are asymptomatic and represent incidental findings on radiograph in adults.[1-3] Conversely, more recent series indicate that most adults with bronchogenic cysts ultimately become symptomatic.[2,5]

Preoperative diagnosis is established primarily by chest radiograph and CT. On radiography, parenchymal bronchogenic cysts are usually sharply defined, solitary, noncalcified, round or oval opacities confined to a single lobe, usually the lower lobe.[1,3] CT is very useful in demonstrating the structures. Generally, bronchogenic cysts have homogeneous CT attenuation and water density (0-20 Hounsfield units). On the basis of the radiologic appearance, preoperative diagnoses were accurate in only 10% to 40% of the cases.[2,3] The differential diagnoses in such cases can only be made during the operation.

The possibility of malignant degeneration, future symptoms, and recurrence after aspiration has led many surgeons to advocate complete removal by thoracotomy in all patients.[2-4] When the cyst cannot be removed completely at thoracotomy, partial excision with de-epithelization may be an alternative.

The bronchogenic cyst in the case we present here is particularly interesting because it was asymptomatic, giant, and presented as hydropneumothorax on chest radiograph. Definitive tissue diagnosis is usually available only after surgical excision. The possibility of bronchogenic cyst should be taken into consideration.

References

1. Matzinger MA, Matzinger FR, Sachs HJ. Intrapulmonary bronchogenic cyst: spontaneous pneumothorax as the presenting symptom. *Am J Roentgenol*. 1992;158:987-8.
2. Patel SR, Meeker DP, Biscotti CV, Kirby TJ, Rice TW. Presentation and management of bronchogenic cysts in the adult. *Chest*. 1994;106: 79-85.
3. Suen HC, Mathisen DJ, Grillo HC, LeBlanc J, McLoud TC, Moncure AC, et al. Surgical management and radiological characteristics of bronchogenic cysts. *Ann Thorac Surg*. 1993;55:476-81.
4. Bolton JWR, Shahian DM. Asymptomatic bronchogenic cysts: what is the best management? *Ann Thorac Surg*. 1992;53:1134-7.
5. St-Georges R, Deslauriers J, Duranceau A, Vaillancourt R, Deschamps C, Beauchamp G, et al. Clinical spectrum of bronchogenic cysts of the mediastinum and lung in the adult. *Ann Thorac Surg*. 1991;52:6-13.
6. André CH, Deslauriers D, Deslauriers J. Foregut cyst of the mediastinum in the adults. In: Shields TW, Lo Cicero III J, Ponn RB, editors. General Thoracic Surgery. 5th ed. Philadelphia: Lippincott Williams & Wilkins; 2000. p. 2401-13.
7. Maier HC. Bronchogenic cysts of the mediastinum. *Ann Surg*. 1948; 127:476-502.

Successful treatment of huge chronic expanding hematoma after thoracoplasty

Iwao Takanami, MD, Tokyo, Japan

Chronic expanding hematoma in the chest is known to be a specific type of chronic empyema. Four cases of chronic expanding hematomas after thoracoplasty have been reported in Japan.[1-3] As far as I have been able to determine, no such cases have been reported in other countries. Incomplete treatment for tuberculosis, such as thoracoplasty, is considered to be one of the origins of this disease. Here I describe the successful treatment of a patient with chronic expanding hematoma after a thoracoplasty.

From the Department of Surgery, Teikyo School of Medicine, Tokyo, Japan.

Received for publication March 11, 2003; accepted for publication April 24, 2003.

Address for reprints: Iwao Takanami, MD, Department of Surgery, Teikyo School of Medicine, 2-11 Kaga 2-Chome, Itabashi-Ku, Tokyo, 173 Japan (E-mail: takanami@med.teikyo-u.ac.jp).

J Thorac Cardiovasc Surg 2003;126:1202-3

0022-5223/2003 $30.00 + 0

doi:10.1016/S0022-5223(03)00787-6

Clinical Summary

A 79-year-old man was admitted with a chest wall swelling. Fifty-two years earlier, at the age of 27 years, the patient underwent thoracoplasty for the treatment of tuberculosis. A year earlier a tumor had been detected in the right axilla, which had gradually protruded. For the purpose of more detailed examination, he was transferred to my hospital. Physical examination revealed a large tumor, 30 × 10 × 10 cm in size, from the right axillar region to the anterior chest region, with skeletal deformity and operative scars due to the thoracoplasty. Chest roentgenogram showed a well-defined complete opacification in the right upper thorax and right upper skeletal deformities due to the thoracoplasty. Magnetic resonance imaging revealed a heterogenous mass growing from the adjacent of remained ribs to the anterior chest (Figure 1). On needle biopsy, there was only a fibrous connective tissue with fibrin infiltrated with a few small lymphocytes and neutrophils. With the permeable values of hemodynamics and respiratory functions, his general condition also indicated that he could tolerate the operation.

Tumor extirpation was performed under a clinical diagnosis of chronic empyema. The fibrous hard adhesion was evident but new vascularizations were not so severe; the total blood loss was 530 mL. The tumor was encapsulated in part by connective tissue and