MEDIASTINAL THYMIC CYSTS: A REPORT OF THREE CASES

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Thymic cysts are rare benign lesions of the mediastinum, comprising only 5% of all mediastinal cysts.¹ Although most of these cysts are asymptomatic and of no clinical significance, a rare few are of importance because they cause symptoms and signs, masquerading as malignant mediastinal tumors. There is little agreement, however, on the best diagnostic and therapeutic approaches to thymic cysts and the other mediastinal cysts. The three cases of thymic cysts described here posed diagnostic challenges, but all were resolved without event on surgical exploration and excision.

Patients were two adult women (aged 54 and 34 years) and an adult man (aged 31 years) in whom respiratory symptoms predominated, with increasing cough, dyspnea, and weight loss of 15 to 20 pounds during a period of a few months. Chest roentgenography demonstrated a mass in the anterosuperior mediastinum in all three patients; in addition, there was a marked right tracheal shift and left upper lobe atelectasis in the 31-year-old male patient (Fig. 1). Results of computed tomographic (CT) scans of the chest differed among the three cases. A homogeneous and probably cystic mediastinal mass with a definite, thick, fibrous capsule was found in the 54-year-old woman. Results of percutaneous fine-needle aspiration and biopsy under CT guidance were not diagnostic and did not relieve the symptoms, obtaining scanty aspirant with a few squamous elements. Total excision of this well-contained, globular cystic mass (6 × 5 cm) was performed through a median sternotomy. A tissue diagnosis of thymic cyst was made because the cyst wall containing thymic and lymphoid tissue was readily demonstrated.

A 34-year-old woman had oligemic lung fields visible on chest roentgenography and bilateral perfusion defects visible on lung scan. Pulmonary angiography demonstrated compression of the main pulmonary artery and the left branch pulmonary artery. CT scan demonstrated an anterior mediastinal mass with a low attenuation value but with nonhomogeneous periphery and indistinct capsule. Results of mediastinoscopy and needle aspiration and biopsy of the lesion were not diagnostic but partially relieved the patient's symptoms as a result of the aspiration of some of the cyst contents. Worsening respiratory symptoms a few days later necessitated exploration and total surgical excision of this poorly encapsulated, firm mass (6 × 7 cm). Cardiopulmonary bypass was not necessary. The mass consisted of thick, inflammatory

Fig. 1. Chest roentgenogram in a 31-year-old man showing a large lesion in the anterior mediastinum, shifting the trachea to the right. Surgical excision and histopathologic examination confirmed a ruptured thymic cyst.

fibroadipose tissue and a centrally located hemorrhagic cyst, with thymic glandular remnants within the cyst wall.

In the 31-year-old man, CT scan demonstrated a homogeneous, solid anterior mediastinal mass distinct from vascular structures but indistinct from neighboring lymph nodal tissue. Solid malignant tumor was considered the most probable diagnosis. The mass was compressing the left upper lobe bronchus, with left upper lobe atelectasis. Results of percutaneous needle aspiration and biopsy of the lesion were inconclusive. Surgical exploration through a median sternotomy revealed a firm mass (7 × 7 cm) surrounded by inflamed fibroadipose tissue. The left phrenic nerve was trapped within it. Frozen-section examination of the lesion showed no malignancy but was not diagnostic. Total surgical excision of the tumor was performed, preserving the phrenic nerve but including at-

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tached pericardial margins within the resection. Histopathologic diagnosis was a ruptured thymic cyst, with severe inflammatory tissue reaction surrounding the cyst. Left upper lobe pneumonia and atelectasis resolved, and the patient had uneventful recovery.

Thymic cysts are very rare cystic lesions; they represent only 1% of all mediastinal tumors. Most of these cysts are either of congenital origin, representing derivatives of embryonal thymic tissue, or acquired as a result of involutionary changes occurring in the gland.¹ The term *true thymic cyst* favors congenital origin of these lesions and accounts for 78% of all cysts of the thymus.² True thymic cyst as an entity is differentiated from cystic thymoma, a neoplasm with secondary cystic degeneration. Thymic cysts are either unilocular or multilocular and lined with cuboidal, squamous, or columnar epithelium. The cyst contents vary from clear, straw-colored fluid to bloody, green viscous fluid, with the cyst wall containing remnants of thymic and lymphoid tissue. The cysts enlarge rapidly as a result of hemorrhage within the cyst cavity or secondary infection.² Most thymic cysts are asymptomatic and are discovered as an incidental finding on chest roentgenography or CT scan. Cysts causing symptoms such as dyspnea, dysphagia, vocal cord paralysis, and signs and symptoms of cardiac tamponade and eventration of diaphragm, all causing the cysts to masquerade as malignant mediastinal tumors, have been reported in the literature.²

The diagnosis and treatment of thymic cysts are controversial. Ultrasonography and CT scan may aid in the diagnosis of these cystic lesions. A homogeneous mass with low attenuation values and indefinite capsule seen on CT scan is highly suggestive of thymic cyst, whereas a nonhomogeneous solid mass generally represents cystic thymoma.³ Nevertheless, the findings on CT scan of the cysts we reported on here are atypical and would be considered indicative of either a solid neoplasm (34-year-old woman and 31-year-old man) or a cyst of nonthymic origin (54-year-old woman).

If the diagnosis of thymic cyst is considered highly probable on the basis of radiologic findings alone, an asymptomatic lesion may be observed.⁴ Percutaneous fine-needle aspiration and biopsy and mediastinoscopy and needle aspiration are suggested for diagnosis and possible cure of these lesions. In our experience with these three cases, however, these techniques were found useful neither for cure nor for diagnosis, probably because these cysts were surrounded by either dense fibroinflammatory tissue or thick fibrous capsule. In lesions whose true nature is uncertain, when cystic thymoma cannot be excluded, and lesions causing significant symptoms, surgical exploration and excision are necessary for definitive diagnosis and cure.⁵

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