SPIRAL CT SCAN OF THE THYMIC CYST

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ABSTRACT

A case of uncomplicated thymic cyst was demonstrated by plain films and spiral CT scan. The patient was 58 years old, having chronic cough. Images of simple cyst at anterior mediastinum extending to left perihilar area were shown.

INTRODUCTION

Cystic lesions of the thymus gland are acquired lesions of thymic tissue that may be found anywhere along lines of the thymic descent, from the angle of the mandible to the body of the sternum. Thymic cysts are distinguished from other cysts by the presence of thymic tissue in their walls. These simple cysts are lined by epithelium that may be flattened, columnar, squamous, or ciliated and are filled with accumulated fluid, cellular debris and hemorrhagic extravasation. Leakage of these contents into the surrounding tissues may simulate infectious granulomatous inflammation. Although some may be developmental in origin and derived from the third branchial pouch, the origin of most thymic cysts-whether mediastinal or cervical in location-appears to be degenerating or enlargement of the Hassall's corpuscles. It is probable that most are derived from remnants of the fetal thymopharyngeal duct.[4,15,16] An unusual intrathoracic thymic cyst that has been described in a 2 year old girl contained not only thymic tissue in its walls but also parathyroid and salivary gland tissue, all tissues of pharyngeal origin. Thymic cysts are uncommon mediastinal lesions that account for only 1 to 2 per cent of all tumors in the anterior compartment.[1-3] The apparent association of some cysts with infection (e.g. syphilis or tuberculosis), neoplasms, radiation therapy and trauma suggest that local disruption of thymic tissue can induce the formation or growth of the cysts.[5]

CASE REPORT

A 58-year old male patient, presented with chronic cough and syncope attack. Routine chest films for the insurance showed a lobulated left perihilar anterior mediastinal mass (Fig.1). The patient has no systemic abnormal physical examination. Spiral CT scan of the thorax was performed. It showed a well defined border cystic mass (H.U. 4.4-25.4) at anterior mediastinum, extending from midline area to paramedian and left perihilar region. The mass showed no increased enhancement. The surrounding structures were not invaded. There was no enlarged intrathoracic nodes (Fig. 2). The thoracoscopic thymectomy was performed. A large cystic mass was seen in left lobe of the thymus gland by surgery and pathology.

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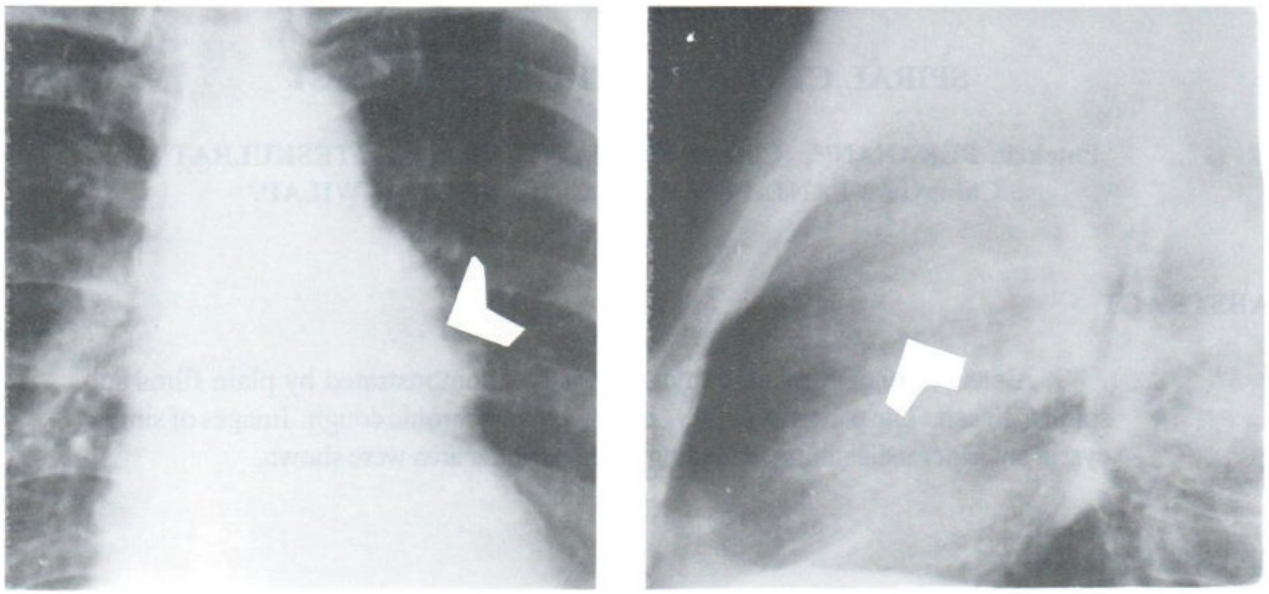

Fig. 1. PA and left lateral chest films showed a lobulated mass at left perihilar area, obscuring the left heart border and in lateral view, the soft tissue density filled the usually radiolucent anterior mediastinal region, indicating that the soft tissue mass was at the left anterior mediastinum.

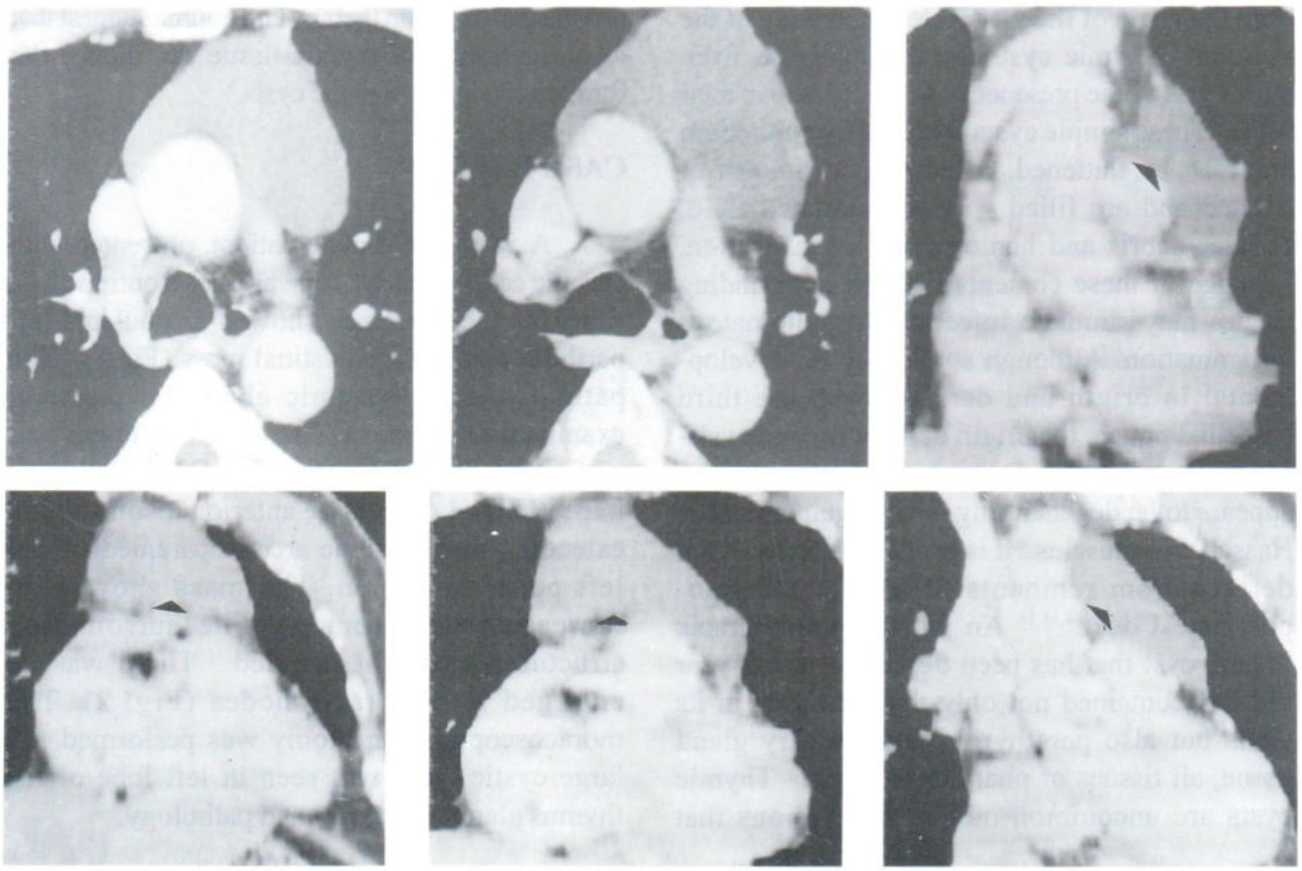

Fig.2. Axial, coronal and oblique coronal and oblique sagittal views spiral CT scan of the thymic cyst showed a sharply well defined border cystic lesion at the anterior mediastinum, extending to the left perihilar area without invasion of the nearby structures.

DISCUSSION

Pathologically, the thymic cysts are unilocular or multilocular and range in size from microscopic to 18 cm in maximun diameter.[1,4] They can contain straw-colored fluid or, if hemorrhage has occurred, brown-green gelatinous or grumous material. Histologically, the cyst wall is lined by squamous, transitional, or simple cuboidal or columnar epithelium; ulceration with underlying fibrosis and chronic inflammation is fairly common as is evidence of remote hemorrhage (hemosiderin-laden macrophages and cholesterol clefts). Thymic tissue can be identified focally in the cyst wall and its presence is necessary to make the diagnosis.

An important point in the pathologic differential diagnois is the observation that some malignant tumors, particularly thymoma, Hodgkin's disease, and seminoma, can show prominent cystic change, occasionally associated with neoplastic tissue that is relatively small in amount; consequently thorough sampling of every "thymic cyst" must be carried out to exclude the possibility of neoplasia, especially if the "cyst" wall is thickened by fibrous tissue. In addition to such degenerative changes in a primary neoplasm, it has been suggested that Hodgkon's disease can occasionally develop in the wall of a true thymic cyst.[1,6] Although rare, carcinoma also has been reported to arise from cyst epithelium.[7]

The appearance of the thymic cysts on conventional roentgenograms is no way characteristic or diagnostic[1,2,3] although their cystic nature should be readily apparent on CT or MR images. Most patients are asymptomatic. In one patient, obstruction of the pulmonary artery by the cyst resulted in chest pain, dyspnea, and a systolic thrill and murmur on physical examination; the patient was originally misdiagnosed as having stenosis of the pulmonary valve.[1,8]

The patient with a thymic cyst may be symptom-free and a routine chest radiograph may reveal a mass in the anterior mediastinum. When symptoms do occur, they are probably related to hemorrhage into the cyst leading to increase in size and pressure on adjacent structures. The most frequent symptoms are pain or fullness in the chest and dyspnea, which may be more severe when the patient is supine. Other less frequent symptoms are dysphagia, choking, non-productive cough, weight loss and tachypnea. Thymic cysts may also present with acute cardiorespiratory distress,[9] Horner's syndrome,[10] vocal cord paralysis,[11] loculated pneumomediastinum,[12] simulation of cardiomegaly with haemodynamic abnormalities.[13]

CT shows the cysts to be rounded and fluid-filled. These cysts may undergo hemorrhage or calcification. The CT density of these cysts is usually near that of water, it can be confused with solid masses because of the hemorrhagic or proteinaceous content.[5,14]

Cystic lesions of other derivations arising in the thymus or in the same locations as thymic cysts include developmental cysts of the respiratory, gastrointestinal, pericardial and lymphatic systems.[15,16]

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