

# Pericardial Effusion in a Young Man: A Rare Presentation of Thymoma

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**T**hymoma is a rare tumor of the anterior mediastinum with slow progressive presentation, which is usually detected incidentally on radiographic images. We present a case of a young patient who was evaluated for hoarseness resulting from left recurrent laryngeal nerve palsy, and was found to have pericardial effusion secondary to thymoma with local structural invasion. Although most types of thymoma are considered benign, local invasion for adjacent structures may be observed, making complete resection of the mass more challenging. The presence

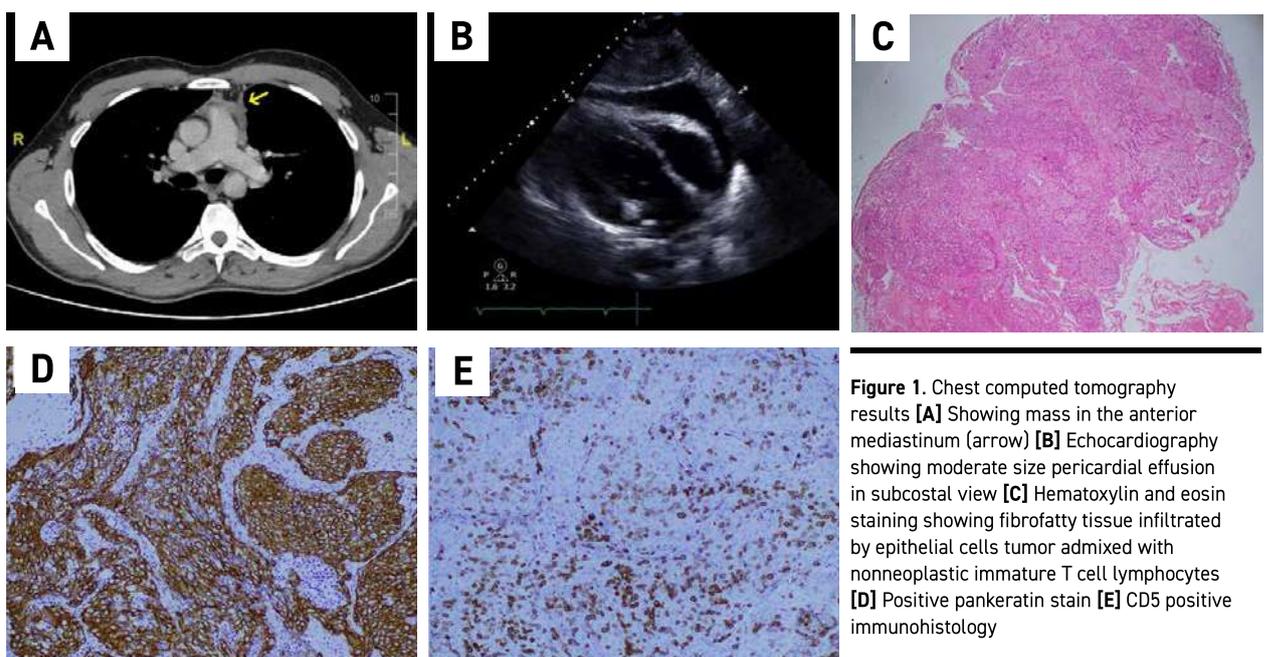
of pericardial effusion in patients with thymoma should always be managed by a multidisciplinary team as it may indicate such local structural invasion.

## PATIENT DESCRIPTION

A 36-year-old male with an unremarkable past medical history except for smoking tobacco was evaluated in an outpatient facility due to hoarseness. He reported a progressive hoarseness for 3 months with mild effort dyspnea on excessive physical activity. He denied any chest pain, palpitations, orthopnea, or paroxysmal nocturnal dyspnea. His appetite was good with no bowel habit changes or weight loss. His physical examination was not significant except for muffled heart sounds,

with no cardiac murmurs, signs of heart failure, or palpable lymphadenopathy. The patient was referred for fiber optic exam, which revealed paralysis of the left vocal cord, a finding that could be consistent with left recurrent laryngeal nerve palsy. Chest computed tomography was performed and revealed an anterior mediastinal mass with moderate pericardial effusion [Figure 1A].

The patient was referred to our hospital for further evaluation with symptoms of hoarseness and mild effort dyspnea. His vital signs on admission were within normal limits with no evidence for jugular venous distension or pulsus paradoxus. Electrocardiography showed normal sinus rhythm with normal voltage. His laboratory tests were significant for ele-



**Figure 1.** Chest computed tomography results [A] Showing mass in the anterior mediastinum (arrow) [B] Echocardiography showing moderate size pericardial effusion in subcostal view [C] Hematoxylin and eosin staining showing fibrofatty tissue infiltrated by epithelial cells tumor admixed with nonneoplastic immature T cell lymphocytes [D] Positive pankeratin stain [E] CD5 positive immunohistology

vated C-reactive protein (25 mg/L, normal 0–5 mg/L), with normal hemoglobin level (13.7 g/dl), immunoglobulins, and kidney function. Serological tests for antinuclear antibodies, anti-DNA, anti-SCL-70, rheumatic factor, and anti-n-RNP antibodies were also negative. Echocardiography was significant for moderate pericardial effusion without signs of tamponade [Figure 1B].

The case was discussed with a thoracic surgeon, and a decision was made to perform a video assisted thoroscopic biopsy from the pericardium and the mediastinal mass with concomitant drainage of the pericardial fluid for symptomatic relief and cytological examination. The procedure was performed successfully without complications. Mass biopsy revealed fibrofatty tissue infiltrated by polygonal epithelial cells tumor with solid sheets and lobular growth patterns admixed with nonneoplastic immature T cell lymphocytes. Hematoxylin and eosin stain showed cortical B3 thymoma with epithelial cell tumor [Figure 1C].

Immunohistochemical assays were performed and neoplastic cells were positive for Pankeratin [Figure 1D], CK5/6, P63, P40, and Ki67 and negative for CLA, CD117, and CD5. Nonneoplastic immature T lymphocytes were positive for CLA, TdT, and CD5 [Figure 1E]. These findings favor the diagnosis of thymoma, cortical, B3 type. Pericardial biopsy showed inflammatory infiltrates without evidence of malignant disease.

**COMMENT**

Although it is a rare neoplasm, thymoma accounts for 20% of all mediastinal neoplasms and up to 50% of all the anterior

mediastinal tumors [1]. Other tumors localized in the anterior mediastinum include, thymic carcinoma, lymphoma and germ cell tumor (teratoma) [1]. Thymoma originates from epithelial cells of the thymus gland with peak incidence in the fourth and fifth decades of life and with similar incidence between men and women [2]. Most of the cases are detected incidentally as a radiographic abnormality due to indolent and benign behavior. Approximately one-third of the cases present with symptoms that can be attributed to local structures involvement such as cough, dysphagia, and hoarseness [3]. Thymomas are often associated with a variety of paraneoplastic syndromes such as myasthenia gravis, pure red cell aplasia, and hypogammaglobulinemia. These syndromes may precede or appear after the diagnosis of thymoma or even after the treatment.

In our case, the patient was evaluated due to mild symptoms of dyspnea on exertion, which resulted from pericardial effusion. Other causes for pericardial effusion such as immune diseases should be ruled out. Systemic lupus erythematosus, rheumatoid arthritis, and systemic sclerosis were ruled out in our case by the absence of relevant symptoms and serum antibodies. In case myasthenia gravis is suspected due to typical symptoms such as muscle weakness, double vision, and ptosis, tests for anti-acetylcholine receptor antibodies and neurological workup should be conducted.

Thymomas can be classified according to the WHO classification into six classes—A, AB, B1-B3, and C (C class refers to thymic carcinoma)—based on the predominant cell type [4]. The outcome depends mainly on age, stage of the disease (clinical staging rather than

histological grading), and involvement of adjacent structures. Surgical excision is the treatment of choice for localized and nonmetastatic tumors. Patients with invasive disease may benefit from preoperative chemotherapy. Recently, robotic-assisted thoracic surgery for mediastinal tumors, including thymoma, has been reported to be safe and efficient [5].

**CONCLUSIONS**

Pericardial effusion is a rare manifestation of thymoma, indicating advanced disease with possible adjacent structural involvement that prompts immediate multidisciplinary evaluation by cardiologists, oncologists, and cardiothoracic surgeons.

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**"The only real mistake is the one from which we learn nothing"**

John Powell (born 1963), British film score composer

**"We succeed in enterprises which demand the positive qualities we possess, but we excel in those which can also make use of our defects"**

Alexis Charles Henri Clérel (1805–1859), Viscount de Tocqueville, a French diplomat, political scientist and historian.