

## Malignant Carcinoma of Thymus Presented as Intrapericardial Mass and Tamponade

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**Abstract:** A 34-year-old woman presented with tamponade and right pleural effusion. After drainage of pericardial and pleural fluid, Computed Tomography (CT) angio was done and massive effusion in lateral of Right Atrium (RA) was reported, but Transesophageal Echocardiography (TEE) revealed large intrapericardial mass with pressure effect on RA and Right Ventricle (RV), so thoracotomy was done and malignant carcinoma of thymus was reported. Malignant carcinoma of thymus has unusual presentations and cardiac involvement as first presentation is uncommon and should be considered. TEE has important role in recognizing and defining tumor.

**Key words:** tamponade-malignant carcinoma of thymus

### CASE REPORT

A 34 year-old woman with no medical history admitted due to shortness of breath. Physical exam revealed BP=100/60 mmHg, with 20 mmHg pulsus paradoxus, heart rate=90/min, respiratory rate=28/min and there was muffled heart sounds in cardiac examination. Electrocardiography showed electrical alternans with sinus tachycardia and examination of other organs was unremarkable. Transechocardiography showed massive pericardial effusion with RA and RV collapse (Fig. 1), so pericardiocentesis via subxiphoid approach was done and 1000 cc yellow fluid drained and two days later due to massive plural effusion, right chest tube was inserted and 2000cc fluid drained. Analysis of pericardial fluid showed: glucose=54 mg/dl, protein=4.9 mg/dl, LDH343, WBC=2600 (neutrophil=14%, lymphocyte=86%) Hb=negative and pathology showed rare mesothelial and neutrophil cells. Pleural fluid analysis showed: WBC=1-3, glucose=97 mg/dl, protein 5 mg/dl, LDH=304 and it was negative for malignancy.

Other laboratory tests and thyroid function tests were in normal range. Because of right lower lobe haziness, after drainage of pleural effusion CT angio was done, which showed collapse of anterior and lateral basal segments of lower lobe of right lung and large pericardial effusion with asymmetric distribution, located at lateral part of RA (50 mm) and extended to the level of aortic arch in superior pericardial recess. For better evaluation, we decided to do TEE. TEE revealed large extra cardiac nonhomogenous mass that begins from superior part of Superior Vena Cava(SVC) and anterior aspect of aorta and



Fig. 1: Transthoracic view of 4 chamber, representing massive pericardial effusion behind RA

extended toward lateral side of RA and RV with compression effect on RA and RV, with size about=10x4.76 cm, (Fig. 2). There was also a loculated pericardial effusion behind RA (Fig. 2). Consultation with surgeon was done and thoracotomy was planned for patient and mass was completely extracted and pathology examination showed, malignant carcinoma of thymus and patient referred to oncologist.

### DISCUSSION

Thymus gland undergoes atrophy in the adult. Because of the central role of the thymus in the immune system, thymomas commonly result in immunologic manifestations. Malignant thymoma are classified into two different groups. 1) those with a histologically benign appearance but with invasion into surrounding structures



Fig. 2: Transesophageal view showing large intrapericardial mass

and 2) those with a histologically malignant appearance, termed thymic carcinoma. Most tumors occur in adults, mean age 45-50 years old<sup>[1]</sup>. Most patients with thymoma are asymptomatic. The most common presentation is due to a paraneoplastic syndrome. The most common is myasthenia gravis<sup>[2]</sup>. Thymoma and thymic carcinoma is usually located in front part of the chest and is usually discovered during a routine chest-x ray. There are uncommon presentations such as myocarditis in association with thymoma<sup>[3]</sup>. There are different stages: Stage I, well encapsulated mass with 10 year survival about 86-100%, Stage II has invasion into the capsule or surrounding fatty tissues, with survival rate 26-47%. Stage III is extension of the tumor into the adjacent organs and Stage IV refers to distant metastasis<sup>[1]</sup>. The most common cause of death is myasthenic crisis<sup>[4]</sup>. Heart block can occur and is related to myocardial necrosis and patients

with left bundle branch block have a worse prognosis than patients who do not<sup>[5]</sup>. Our case was an unusual presentation of this malignant tumor, presented with tamponade and CT angio reported large pericardial effusion in lateral of RA, but TEE revealed large intrapericardial mass originated from near of SVC and extended to lateral of RA and RV with compression effect, so in a young patient with no medical history attention to malignant process is important. Prompt recognition and complete resection with chemotherapy or radiotherapy is an appropriate treatment.

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