

Silent Tumor: A Case Report of an Incidentally Detected Thymoma in 62-Year-Old Female

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Abstract. Thymomas, although rare, are common primary tumors in the anterior mediastinum¹. It constitutes 0.2 to 1.5% of all malignancies with an annual incidence of 0.15 cases for every 100,000 individuals². Though they can spread locally, they are less invasive compared to thymic carcinomas. This is rare in children and peaks during the fifth decade of life². Most patients are asymptomatic; however, others would present with chest pain, dyspnea, and superior vena cava obstruction³. Diagnosis is incidental in most cases and histopathology is the cornerstone of diagnosis³. We therefore present a case of Thymoma in a patient who had the disease yet remained asymptomatic for almost a decade.

Case Presentation. This is a case of a 62-year-old Filipino female who came in due to dyspnea. 8 years prior to admission, during annual physical exam, chest x-ray was done which showed anterior mediastinal mass. CT scan of the chest was requested revealing anterior mediastinal mass, right. With this finding, she was advised to undergo biopsy which revealed presence of atypical cells to consider Thymoma versus Lymphoma. She was advised for repeat biopsy; however, she was unable comply and was lost to follow up.

In the interim, patient noted onset of occasional cough associated with weight loss and worsening dyspnea. She had negative result for sputum gene Xpert, AFP and B-HCG. Repeat CT scan of the chest with contrast revealed pulmonary mass at the right paracardiac region, right pleural effusion and loculated effusion at the right oblique fissure. Hence, ultrasound of the hemithorax was requested and showed loculated pleural fluid in the right hemithorax approximately 534mL. Two-dimensional echocardiogram with doppler studies showed moderate pericardial effusion measuring 1.29 cm without tamponade. Pleural fluid analysis was consistent with a chronic disease process such as malignancy or TB pleurisy.

Patient was referred to general surgery, but the mass was unresectable at this time. Chest tube thoracostomy can't also be performed, hence ultrasound-guided thoracentesis was attempted in which only 35 mL of serosanguinous pleural fluid was drained. She was then advised to undergo chemotherapy with CAP (Cisplatin, Doxorubicin, and Cyclophosphamide) regimen in which she complied. Patient was eventually discharged improved.

Conclusion. The patient remained asymptomatic for nearly a decade, with the tumor identified only through incidental findings. Given the lack of pathognomonic features, this case highlights the need for a high index of suspicion and comprehensive diagnostic evaluation. Additionally, the involvement of a multidisciplinary team was essential in confirming the diagnosis and formulating an effective management plan.

Keywords. thymoma, anterior mediastinal mass, chemoradiation, surgery

Introduction

Thymoma, although a common primary tumor in the anterior mediastinum, is rare and occurs in 0.15 per 100,000 individuals per year². Approximately 40 percent of patients with anterior mediastinal mass will remain asymptomatic with an incidental finding on chest imaging³. Histopathology remains the cornerstone of

diagnosis³. However, with the introduction of new multimodal treatment methods in diagnosing these tumors has led to significant improvement in the clinical management of thymomas.

Case Presentation

8 years prior to admission, during annual physical exam, chest x-ray was done which revealed anterior mediastinal mass and patient was advised to undergo CT scan of the chest revealing anterior mediastinal mass, right.

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However, results were inconclusive due to lack of intravenous contrast.

With these findings, patient was advised to undergo biopsy which showed Thymoma versus Lymphoma. She was advised for repeat biopsy and possible surgery, however patient did not comply and was lost to follow up.

2 years prior to admission, patient was already a retired teacher, hence she decided to seek consult in a local hospital to work-up her mediastinal mass again. Chest x-ray was done which showed anterior mediastinal mass, right. With these findings, patient was advised to undergo repeat biopsy which revealed consistent with thymoma. Patient was then lost to follow-up thereafter due to the pandemic.

4 months prior to admission, patient had onset of productive cough with whitish phlegm. She sought consult at a local hospital and was given with unrecalled medications which provided temporary relief.

In the interim, she still complains of occasional non-productive cough associated with weight loss. Patient tolerated the condition. Due to worsening of symptoms now with dyspnea, she then opted for admission.

She has no known comorbidities. No maintenance medications. She was admitted last April 2020 due to pneumonia. No previous surgeries.

There are no known hereditary diseases.

She is a retired teacher. She has no vices and no history of illicit drug use.

On admission, she was examined awake, conscious, and coherent, in mild respiratory distress with the following vital signs BP 110/60 mmHg, tachycardic at 119 bpm, tachypneic at 28 cpm, afebrile at 36.6 C with oxygen saturation of 93% at room air. Pertinent physical exam showed crackles on bilateral lung fields with decreased breath sounds on the right. There were no visible neck vein distention, face or neck swelling nor chest vein collaterals. Hence, patient was initially treated as a case of Obstructive Pneumonia, Anterior Mediastinal Mass probably Malignant, to consider Thymoma.

Thymoma, though has an unknown etiology, can also result from dysregulation of lymphocytes leading to abnormal cell proliferation hence the tumor formation in which in the chest CT Scan chest contrast showed a well-defined heterogeneously enhancing with multiple nodular solid components at the right paracardiac region extending from T4 down to T11 measuring 8.23 x 8.72 x 14.09 cm, right pleural effusion and loculated effusion at the right oblique fissure. Hence, ultrasound of the hemithorax was done showing loculated pleural fluid in the right hemithorax approximately 534 mL. Two-dimensional echocardiogram with doppler studies showed moderate pericardial effusion measuring 1.29 cm without tamponade. Pleural fluid analysis was consistent with a chronic disease process such as malignancy or TB pleurisy, however pleural fluid was negative for culture studies, fungal elements and acid-fast bacilli. Overtime if left untreated, it could proliferate

and metastasize to other sites causing inflammatory reaction leading to altered membrane permeability, if severe enough, could lead to both pericardial and pleural effusion in which are present in our patient evident by decreased breath sounds on the right lung field upon auscultation. In loculated pleural effusion, if not addressed, can lead to distortion of wall during respiration and hypoxemia causing the tachypnea and dyspnea of the patient, respectively.

During admission, referral to General Surgery Thoracovascular Surgery Section was done. Upon assessment, noted mediastinal mass was deemed unresectable. Ultrasound-guided thoracentesis was performed and obtained 35 mL of serosanguinous pleural fluid. Analysis was done which revealed elevated polymorphonuclear cells and mononuclear cells consistent with inflammation. The medical oncology team initiated systemic chemotherapy with a combination regimen of cisplatin, doxorubicin, and cyclophosphamide administered in cycles. The patient tolerated the treatment well, demonstrated clinical improvement, and was subsequently discharged with a plan to continue chemotherapy on an outpatient basis. However, after thorough discussions with the healthcare team and her family, the patient elected to discontinue further treatment.

Discussion

Thymoma peaks in the fifth decade of life and there is no difference between sex distribution and no clear risk factors are known³. Most patients would remain asymptomatic and with an incidental finding on chest imaging³.

Clinical presentations rarely help in the diagnosis of thymomas since there are no distinctive features specific for the disease. Some would present with thoracic symptoms such as chest pain, shortness of breath and superior vena cava obstruction or paraneoplastic syndrome such as myasthenia gravis, pure red cell aplasia and hypogammaglobulinemia³.

We are presented with a patient who came in due to dyspnea and anterior mediastinal mass. Without the biopsy result, we can consider the following differential diagnosis, which can be divided into 2, the neoplastic and non-neoplastic. Under the neoplastic, lymphoma can be considered since it is a common anterior mediastinal mass and incidence peaks in adults at 55 years old and older. Also, it is associated with cough, weight loss, and dyspnea which are all present in our patient. Next is thymic carcinoma, it has almost the same presentation with thymoma and can only be distinguished based on malignant histologic features, immunohistochemical and genetic features. Pulmonary lymphangioma under the non-neoplastic cause can also be considered since it is common among women. Patients are usually asymptomatic but in thirty percent of cases can present with cough, chest pain and dyspnea. Ninety percent of cases manifests as mass in the axilla or neck area, when detected in adults it is usually mediastinal in location.

Chest CT scan with contrast is necessary to know if the mass can be resected basing on its relationship with the surrounding structures. PET scan and MRI may be done if clinically indicated but are less useful in the staging of thymoma in contrast to thymic carcinoma. Obtaining a histologic diagnosis using core needle biopsy is the standard of care in patients with anterior mediastinal tumor. This can be done via CT scan or ultrasound-guided imaging⁴. The histologic subtype is less important for management compared to the stage of the disease and the extent of resection⁴.

The Masaoka-Koga staging is commonly used in staging thymomas⁵. For our patient, she already had pericardial and pleural effusion, hence was diagnosed with Stage IVA with a 5-year survival rate of ninety percent for patients who underwent total resection of the tumor⁴.

All patients with thymoma must be managed by a multidisciplinary team who has an experience in managing thymoma and thymic carcinoma. The mainstay of treatment is surgical resection for patients with Masaoka stage I and II tumors³. However, for patients diagnosed with type III and IV with potentially resectable tumors, neoadjuvant chemotherapy can be given to decrease the tumor size as well as allow for resection with negative margins³. But surgery remains controversial and has limited significance in the treatment of stage III and IV thymomas. Since our patient has a locally advanced and unresectable tumor, tissue diagnosis with core needle biopsy is warranted⁶. Since the tumor can't be resected, concurrent chemoradiation therapy is warranted at this time. First line of combination chemotherapy is the CAP regimen which consists of Cisplatin 50mg/m² IV, 1, Doxorubicin 50mg/m² IV and Cyclophosphamide 500mg/m² IV given every 3 weeks. Radiation therapy can be beneficial for patients with locally advanced disease or patients with symptoms caused by compression of the surrounding structures.

Conclusion

A 62-year-old female was incidentally found to have an anterior mediastinal mass during a routine annual physical examination. She had remained asymptomatic for nearly a decade. A core needle biopsy was performed, confirming the diagnosis of thymoma. Surgical resection and chest tube thoracostomy were considered but ultimately deemed unwarranted. The patient was subsequently managed with chemoradiation.

Thymoma is frequently asymptomatic and often identified incidentally through imaging. It should be included in the differential diagnosis for patients presenting with anterior mediastinal masses, thoracic symptoms, or paraneoplastic syndromes.

This case highlights the importance of maintaining a high index of suspicion for thymoma in asymptomatic patients with incidental mediastinal findings. Early identification through routine imaging, even in the absence of symptoms, can significantly influence management decisions and clinical outcomes. A multidisciplinary

approach involving oncology, thoracic surgery, radiology, and pathology remains essential for accurate diagnosis and effective treatment planning.

Patient's Perspective

I had no symptoms when the mass was first found during a routine check-up, so I didn't think it was urgent and didn't pursue further testing. Years later, I began experiencing shortness of breath and a persistent cough. After more tests, I was diagnosed with thymoma and started chemotherapy, which I tolerated well. However, after discussing with my family, I decided not to continue the treatment. This experience made me realize the value of early follow-up, even when there are no symptoms.

Informed Consent

No informed consent was requested.

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Appendix

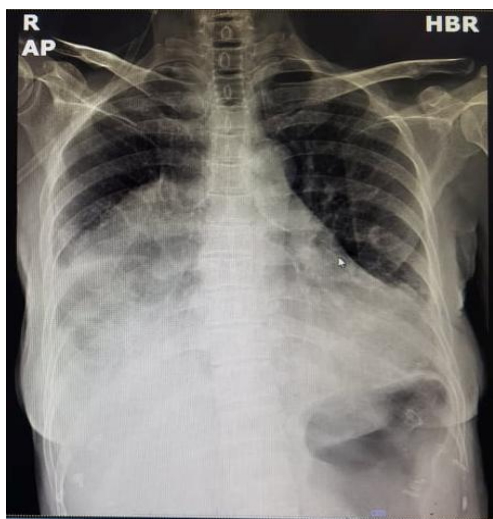


Figure 1 and 2. Chest X-ray showing pneumonia with consolidation, can't rule out underlying mass. There is no shifting in the dependent portion of the right hemithorax.

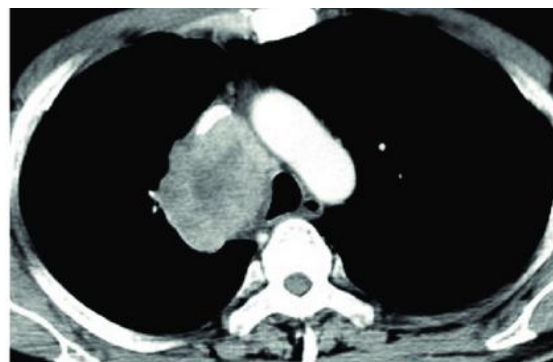


Figure 3. CT scan with contrast showed well-defined heterogeneously enhancing with multiple nodular solid components at the right paracardiac region extending from T4 down to T11 equal to 8.23 x 8.72 x 14.09 cm. Right pleural effusion. Loculated effusion at the right oblique fissure.

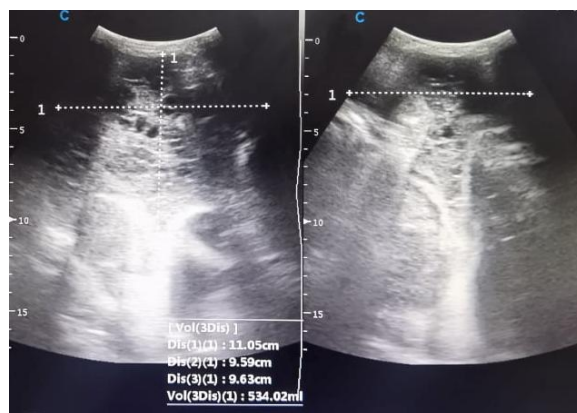


Figure 4. Ultrasound of the Hemithorax showed loculated pleural fluid in the right hemithorax approximately 534mL. No pleural fluid is seen on the left.

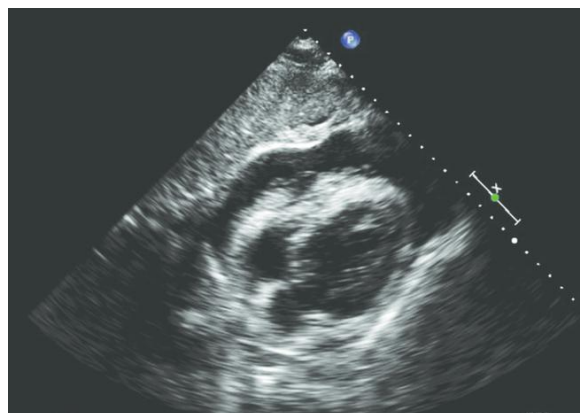


Figure 5. Two-dimensional echocardiogram with doppler studies showed ejection fraction of 61 percent with moderate pericardial effusion measuring 1.29 cm without tamponade.