Case Report

Type-A Thymoma: A Case Report

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Abstract

Background: Thymoma is a neoplasm that arises from the thymus gland. Around one-third of the patients are asymptomatic. Five subtypes of thymoma differentiate from the cell's morphology based on the World Health Organization (WHO). Type-A thymoma comprises oval or spindle epithelial cells.

Case: We presented a 49-year-old woman with a persistent cough and shortness of breath when performing heavy tasks. Chest radiography showed opacity on the mediastinum. Chest computed tomography with contrast revealed a tumor in the anterior part of the mediastinum and pericardial effusion. The patient underwent an Ultrasonography (USG) guided transthoracic needle aspiration (TTNA) and the histopathology examination showed a type-A thymoma. The patient was referred to a cardiothoracic surgeon for further management.

Discussion: Type-A thymoma has a good prognosis and is rarely associated with myasthenia gravis. It has a less malignant nature compared to type B2 thymoma. However, it still can cause respiratory problems through the mass effect of the tumor itself. Surgery is usually the treatment of choice. Radiotherapy and chemotherapy can also be considered if complete resection is hard to achieve.

Conclusion: Type-A thymoma has a less malignant nature and has a good prognosis. In this case, the tumor caused compression into the right lung resulting in the partial collapse of the right middle lobe and pericardial invasion were taken into consideration due to pericardial effusion.

Keywords: thymoma, thymus gland, type-A thymoma

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INTRODUCTION

A thymoma is an epithelial mass that comes from the thymus gland and is one of the most frequently seen primary neoplasms in the anterior part of the mediastinum. It happens primarily in the fourth until the seventh decade of life. The incidence rate is estimated between 0.13 and 0.32 per 100.000 per year.[1] About 30% of thymoma patients are asymptomatic. Symptoms that may occur usually result from compression of surrounding structures and may also be associated with myasthenia gravis.[2]

The most used classification for thymoma is the Masaoka-Koga classification. World Health Organization (WHO) divides thymomas into five types (A, AB, B1, B2, and B3), based on the shape of epithelial cells and the number of lymphocytes. Type-A thymoma is characterized by a spindle or oval-shaped epithelial cell. In general, type-A thymoma has an excellent prognosis and is associated with a favorable clinical course.[3,4]

Myasthenia gravis (MG) is the most associated paraneoplastic sign of thymoma and can be found in 30–50% of patients with thymoma. The symptoms can include muscle weakness, slurred speech and shortness of breath.[5] This study case was chosen because the thymoma present without any sign of MG but rather comes due to symptoms caused by compression of the tumor.

CASE

A 49-year-old woman visited the outpatient department due to a persistent cough for more than 2 weeks and shortness of breath when performing heavy activity. The patient was a non-smoker and had no comorbidities. Physical examination revealed a decreased right lung sound. The patient had no signs of muscle weakness, fasciculations, muscle stiffness, slurred speech, droopy eyelids or any other paraneoplastic signs that were commonly seen in thymoma patient.

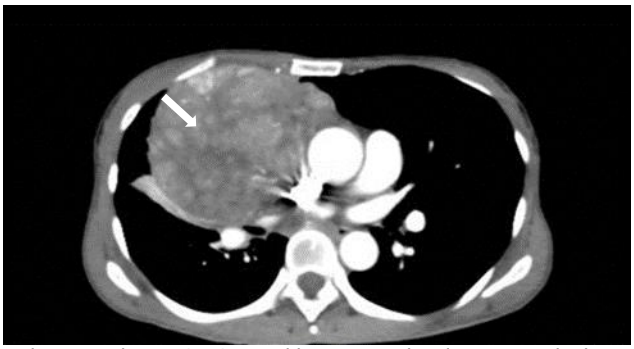

Figure 1. Thorax CT-Scan with contrast showing a mass in the anterior part of the mediastinum

Other neurologic physical examinations were normal. Laboratory examinations were within normal ranges. Chest radiography showed tissue opacity over the mediastinum. Chest computed tomography (CT) with contrast was then performed and showed a large solid mass with a size of 11.1cm x 9.5cm x 12.4cm in the anterior mediastinum with cystic degeneration and peripheral calcification. The mass compressed the right hilum and showed a partially collapsed medial segment of the right middle lobe. A fluid collection was also seen in the pericardium, indicating a pericardial effusion. The patient was admitted into the inpatient department to undergo bronchoscopy followed by ultrasonography (USG) guided trans thoracal biopsy.

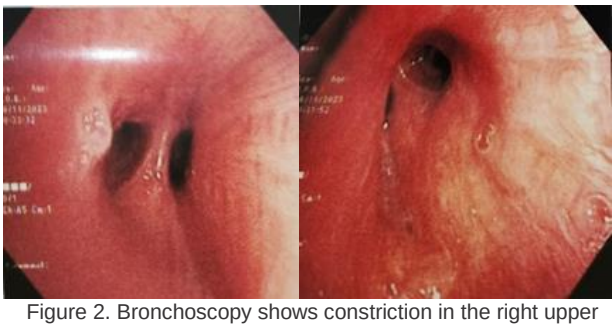

Figure 2. Bronchoscopy shows constriction in the right upper lobe lumen and intermediate bronchus

The bronchoscopy showed constriction in the right upper lobe lumen, and intermediate bronchus due to tumor compression without any sign of invasion. The pathological sample was taken using ultrasonography-guided (USG-guided) transthoracic needle aspiration (TTNA) since the location of the tumor was close to the chest wall. Pathological anatomy examination revealed the tumor cells had oval-shaped spindle cells with few lymphocytes. A hemangiopericytoma vascular pattern was also present.

Based on these findings the tumour is categorized as type-A thymoma according to the WHO classification of thymus tumor. The staging of the thymoma using Masaoka-Koga classification is considered to be stage IVa due to the presence of pericardial effusion that can be seen from the thorax CT scan. The patient was referred to the cardiothoracic department in a larger hospital for further treatment because there was no cardiothoracic surgeon available in our hospital. The treatment option that has been proposed is surgical resection of the tumor and the therapeutic target is an improvement of the patient's symptoms. There is currently no further follow-up of the patient due to the patient has been referred to another health center.

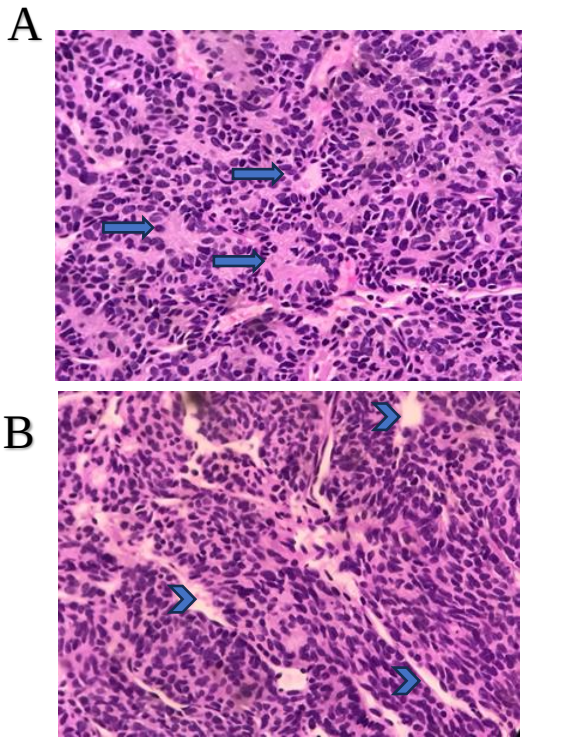

Figure 3. Pathological examination with 400x magnification
A) Spindle and oval-shaped cells with rosette pattern (arrow)
B) Haemangiopericytoma-like vascular (arrow tip)

DISCUSSION

A thymoma is an epithelial neoplasm that arises from the thymic gland. It is the most common neoplasm that comes from the thymic gland and usually are slow-growing tumor.[6] It can occur during any age but is rarely seen in patients under 20 years old and peaks in the seventh decade of life.[7] Incidences are roughly equal in males and females.[1] Around one-third of thymoma patients are

asymptomatic. Some of the patients come with symptoms caused by the compression of the tumor such as dyspnoea, cough and or chest pain which can be seen in this patient. Paraneoplastic syndromes that are often found in thymoma is myasthenia gravis which was not present in this patient.[8,9] The examination of thymus gland malignancies needs to include thoracic imaging (Computed tomography and/or magnetic resonance imaging). Imaging may also help determine the stage of the disease.[7]

The widely used classification developed by Masaoka et al divides thymoma into four clinical stages. WHO classified thymomas based on their histologic appearance into five types that is A, AB, B1, B2, and B3.[3] The thymoma in this patient was identified as a type-A thymoma. Type-A thymoma usually has a good prognosis, is rarely associated with myasthenia gravis and has a less malignant nature compared to type B2 tumor.[4]

Based on the Masaoka staging system, the tumor is considered a stage IVa due to the presence of pericardial effusion even though there is no definitive evidence of invasion or dissemination to the pericardium or pleura. The management is adjusted by the tumor staging and may involve surgery, radiotherapy and chemotherapy. Surgery with complete resection of the tumor is usually the primary choice of management. Radiotherapy after surgical management can be done in patients with a high risk of recurrence or an incompletely resected thymoma at any stage. The ability to completely resect a thymoma is determined by the degree of invasion and/or adhesion of the tumor to surrounding organs.[4]

Thymoma in general is considered chemo-sensitive and chemotherapy can be administered to reduce recurrence. Patients who are contraindicated for surgery can also be considered for chemotherapy or radiotherapy. There is currently no standard chemotherapy regimen. We propose surgical resection as the treatment of choice for the referred hospital because it is the definitive treatment for thymoma. However, it does not rule out the possibility of adding chemotherapy or radiotherapy as the treatment of choice especially when complete resection of the tumor is not possible.

The extent of invasion of the tumor and complete resectability of the tumor affects the survival rate of patients. Ten-year survival rates for thymoma with complete resection are 84% (stage I), 83% (stage II), 70% (stage III), 52% (stage IVa) and 53% (stage IVb).[7] Thymoma has a chance of recurrence even with complete resection. After total removal of the tumor, recurrence can be seen in 9–29% of patients.[10] Recurrence also can happen in all stages of thymoma. Adjuvant radiotherapy after complete resection is associated with a decreased recurrence rate. The location of recurrency can be found extrathoracic although rare.[11,12]

LIMITATIONS

The limitation of this case report is no further follow-up of the patient, especially the treatment since the patient was referred to another health center because there was no cardiothoracic department in our hospital.

CONCLUSIONS

Despite its slow-growing characteristic and frequently found asymptomatic, thymoma can produce respiratory symptoms due to compression and invasion of adjacent tissue. Type-A thymomas are reported less aggressive but in this case, there is a possibility of pericardium invasion marked by pericardial effusion and already caused partial collapse of the lung's right middle lobe. Surgical management is considered for this patient because it is the definitive treatment for thymoma. Radiation therapy and chemotherapy are also taken into consideration if needed.

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CONFLICT OF INTEREST

None.

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