Case Report

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# A Case Report of Mediastinal Thymic Cyst

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## ABSTRACT

**BACKGROUND AND OBJECTIVE:** Incidence of thymic lesions in the form of mediastinal cyst is very rare and is accompanied by risk of malignancy, which may induce signs of compression in mediastinum or accidentally be found during imaging. A case of mediastinal thymic cyst with compression-induced shortness of breath is presented.

**CASE REPORT:** A 40 year old woman underwent diagnostic assessment because of shortness of breath. Considering imaging results regarding upper mediastinal cystic lesion with possible origin of thymus, she underwent excision of mass and middle sternum. Histopathologic examination reported a simple thymic cyst.

**CONCLUSION:** Considering respiratory problems of patients with mediastinal cystic lesion, timely diagnosis and treatment is necessary to prevent probable malignancy in addition to relieving symptoms.

**KEY WORDS:** *Shortness of breath, Mediastinum, Cyst, Thymus*.

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## Introduction

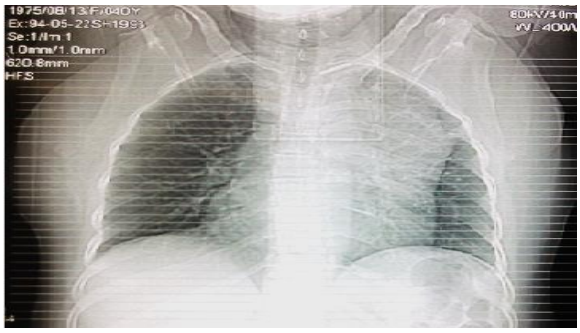
Cystic lesions of thymus in mediastinum are very rare or in other words, uncommon (1, 2). Incidence of thymic cyst is about 10 to 30% among mediastinal masses and 3 to 13% among mediastinal cysts (3). Most of these lesions are benign and they may be congenital or acquired (1). These lesions may have no specific clinical symptom (2). In these cases, clinical symptoms are nonspecific and are often related to compressive effect of lesion on adjacent structures (3). In asymptomatic cases, lesions are accidentally found during imaging and in symptomatic cases, lesions are usually found as a result of compressive symptoms (2). A definitive diagnosis is only possible through histopathological examination (4).

Due to risk of malignancy, surgical excision is advised. However, some researchers suggest conservative treatment in asymptomatic cases (2, 5). Hence, due to scarcity of cystic lesions with thymic origin in mediastinum, risk of malignancy and existence of a symptomatic patient, a case with thymus cystic mass is presented in this report and while undergoing a surgery, we tried to remove clinical symptoms and rule out malignancy.

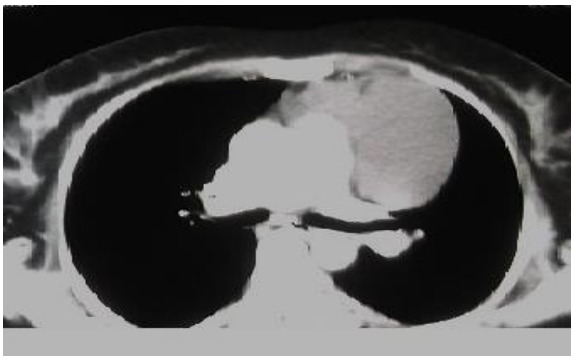
## Case Report

The patient is a 40 year old woman who suffered from shortness of breath since last year and experienced aggravation of exertional dyspnea and occasional heart palpitations during the last four month before hospitalization. Therefore, this case was investigated. Cardiopulmonary assessments and laboratory tests were normal. In chest radiography, an opacity was observed in upper part of the heart corresponding to the left upper mediastinum. For further assessment, the patient underwent a CT scan which demonstrated a unilocular cystic lesion with a thin wall and steady density, indicative of mediastinal cyst with possible origin of thymus. Considering clinical symptoms and risk of malignancy, we decided to proceed with surgery.

Therefore, the patient underwent mid-sternotomy; a cystic lesion evident in the left side of upper mediastinum was excised and released along with the whole wall. In histopathological examinations, a simple cystic lesion with thymic epithelium and residual thymus tissue, indicative of simple unilocular cyst was reported. After surgery, the patient spent an uncomplicated hospital course and did not reveal any notable symptom or complaint during a one-year follow-up.



**Chest radiograph: shows a huge mass in the left upper mediastinum**



**CT scan of the chest (axial view): shows cystic mass with steady density**

## Discussion

In this report, the patient suffered from shortness of breath and heart palpitation due to compressive effect of the mass. Cystic lesions of thymus are uncommon (2). Incidence of thymic cyst is about 10 to 30% among mediastinal masses and 3 to 13% among mediastinal cysts (3). Most patients suffer from asymptomatic thymic cysts (6).

However, they can show symptoms by causing compressive effect on adjacent structures in chest such as esophagus and trachea which may be displayed as wheeze, shortness of breath, cough, chest pain and dysphagia (3, 7, 8). Thymic cysts happen as a result of different causes and they may be congenital or acquired (2,5,7,9,10). Moreover, they may have various manifestations in terms of histopathology and clinical symptoms (5). Most thymic cysts are congenital

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(5). Congenital cysts are unilocular, have thin wall, contain translucent liquid and often do not have signs of inflammation (11, 12). Congenital cysts appear at lower ages compared with acquired cysts (7, 8). An interesting point in the presented patient is the fact that mediastinal mass shows radiographic evidence of simple congenital cyst; but the patient was asymptomatic up to middle age.

Thymic congenital cysts are derived from remnants of thymopharyngeal duct. Since thymus glands migrate from neck to mediastinum during embryonic development, these cysts may be found anywhere from neck to mediastinum (7, 10, 13). On the contrary, acquired cysts are multilocular, have thin wall, contain opaque liquid and gelatinous substances with fibrosis and are divided into three categories of inflammatory, infectious and neoplastic (2, 4, 12).

Various factors may cause thymic multilocular cysts including cystic degeneration of thymoma, Hodgkin's lymphoma, seminoma, Sjogren's syndrome, Myasthenia Gravis, HIV, aplastic anemia, radiation and surgical trauma (5, 8). The patient in this report had no history of prior underlying disease or any of the aforementioned causes. Thymic cysts are usually diagnosed accidentally and as a result of radiographic study for other purposes such as chest X ray (CXR), echocardiography, computerized tomography scan (CT scan) and magnetic resonance imaging (MRI). A definitive diagnosis with imaging before surgery rarely happens. However, radiographic studies can provide us with useful information to determine the extent of the lesion and schedule for a surgery (7).

Nevertheless, chest X ray is the first step of diagnosis, usually demonstrating an area with increased opacity and specified limits in the chest. Ultrasonography may also be helpful. CT scan with contrast medium shows a thymus-based cystic unilocular or multilocular lesion with specified limits. Regarding the patient in this report, a lesion was observed in chest radiography first and after further investigations with CT scan, a cystic legion was reported in mediastinum with thymic origin. Thymic cysts have the potential for malignant changes (8, 14). Internal hemorrhage or infection can increase the size of cyst and cause compressive effects and clinical symptoms. Hemorrhagic cysts may cause hemomediastinum or hemothorax (2).

When a thymic cyst is diagnosed, surgery will be the preferred treatment (1, 4). Accurate histological diagnosis can be achieved with surgery, and if the patient is symptomatic it can help to relieve symptoms (2). However, reports indicate supportive therapy in asymptomatic cases (9). Since the patient in this report was symptomatic and there was the risk of malignity, surgical excision of the mass was conducted, leading to resolution of clinical symptoms. Malignancy of the lesion was rejected in histopathological examination. Prognosis followed by surgical excision of the thymus is excellent (2, 5). Cases of local recurrence are extremely rare (2). The patient spent an uncomplicated hospital course and did not reveal any notable symptom or complaint during a one-year follow-up. Despite being uncommon, mediastinal cystic masses are associated with malignancy risk and clinical symptoms due to compressive effect and surgical excision can help us to have a precise histological diagnosis and resolve the clinical symptoms.

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## References

1.Suster S, Rosai J. Multilocular thymic cyst: an acquired reactive process- study of 18 cases. Am J Surg Pathol. 1991;15(4):388-98.

2.Wang YC, Lai CY. Mediastinal thymic cyst-Yu-Chieh.Cheng Ching Med J. 2009;5(2):47-50.

3.Gursoy S, Ozturk A, Ucvet A, Erbaycu AE. Benign primary cystic lesions of mediastinum in adult: the clinical spectrum and surgical treatment. Arch Bronconeumol. 2009;45(8):371-5.

4.Singhal M, Lal A, Srinivasan R, Duggal R, Khandelwal N. Thymic carcinoma developing in a multilocular thymic cyst. J Thorac Dis. 2012;4(5):512-5.

5.Manuj Kr, Saikai1, Prasad Kalita J, Phukan P, Yunus Md, Padmanabhan A. Multilocular thymic cyst from ectopic superior mediastinal thymic tissue: a rare case report". J Evi base Med Healthcare. 2015;2(27):4056-60.

6.Cuasay RS, Fernandez J, Spagna P, Lemole GM. Mediastinal thymic cyst after open heart surgery. Chest. 1976;70(2):296-8.

7.Muller DK, Mancini MC. Thymic tumors. Emedicine Medscape. 2006. Available From: http://emedicine.medscape.com/article/427197-overview.

8.Philippart A, Farmer D, e. Benign mediastinal cysts and tumors. In: O'Neill JA Jr, Rowe MI, Grosfeld JL, 5th. Mosby: Pediatric Surgery; 1998.

9.SI. I, Park S, Kho J, Lee J, Choi B, Kim J, et al. A case of thymic cyst in the middle mediastinum mimicking pericardial cyst. J Cardiovasc Ultrasound. 2007;15(2):40-2.

10.Masaki H, Hiromasa S, Satoru O. A case of thymic cyst associated with thymoma and intracystic dissemination. Rad Med. 2000;18(5):311-3.

11.Liang S, Ohtsuki Y, Sonobe H. Multilocular Thymic Cyst associated with thymoma: a case report. Path Res Pract 1996;192(12):1283-7.

12.Choi YW, McAdams HP, Jeon SC, Hong EK, Kim YH, Im JG, et al. Idiopathic multilocular thymic cyst: CT features with clinical and histopathologic correlation. AJR Am J Roentgenol. 2001;177(4):881-5.

13.Ballal H, Mahale A, Hegde V. Cervical thymic cyst. Indian J Radiol Imag. 1999;9(4):187-9.

14.Yamakawa K, Tsuchiya Y, Naito S, Kawaguchi JS. A Case Report of Thymic Cyst.Chest J. 1961;39(5):42-5.

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