# Asymptomatic paracardiac giant mass in a young adult

*Genç bir hastada asemptomatik parakardiyak dev kitle*

*Çengiz Öztürk, Emrullah Solmazgül*, Ahmet Şen***, Servet Emeksiz***

Departments of Cardiology, *Internal Medicine and **General Surgery, Air Force Hospital, Eskişehir, Turkey
***Department of Aerospace Medicine, GATA, Eskişehir, Turkey

## Introduction

Benign teratomas consist of a disorganized mixture of derivatives of the three germinal layers: ectoderm, mesoderm, and endoderm. Consequently, they may contain elements of skin and its appendixes, bone, cartilage, intestinal and respiratory epithelium, and neurovascular tissue (1). The most common sites of teratomas are the ovaries and mediastinum (2). Teratomas account for 8% to 13% of all tumors of the mediastinum (3).

The lesions occur most often in adolescents or young adults, but the incidence is similar in both sexes. About one-third of the patients are asymptomatic, but symptoms are likely to develop if the cysts become infected and erode into the pericardial space, the pleural space, or a bronchus (1). Typical computed tomography (CT) appearances of teratomas are an encapsulated mass with a smooth wall containing soft tissue, fluid, fat, calcification or any combination of these (4,5). All ruptured mediastinal teratomas have a tendency to display inhomogeneity of the internal components, whereas 90% of unruptured masses show homogeneous densities of internal components in each compartment of the mass (6). Since benign teratomas are resistant to radiation and cytotoxic drugs the treatment mainly consists of surgical resection. If the benign lesions are completely resected, the disease-free interval averages 10 years (7).

In this report, we present a case of an asymptomatic paracardiac giant mass, which was unruptured and showed inhomogeneous densities of internal components on CT.

## Case Report

A 26-year-old female applied to our hospital with common cold complaints. On admission, physical examination was normal except common cold findings. The laboratory findings were normal. Chest radiography was ordered for routine investigation.

There was enlargement of cardiac image size on left-upper border on chest radiography (Fig. 1). In order to reveal the relation of abnormal appearance with cardiac structures echocardiography was planned. Echocardiography showed a 5.0 x 8.0 cm heterogeneous mass adjacent to pericardium (Fig. 2). Finally, we decided to perform thoracic CT.

Thoracic CT scanning demonstrated an 11x7x5cm-sized, well-demarcated, slightly lobulated, heterogeneous mass with hyperdense and liquid density components that were considered to contain fat and teeth. The mass was localized mainly in the upper mediastinum, anteromedially to the right atrium and anterosuperior to the left ventricle, in contact with ascending aorta and hilus of the lung, and adjacent to the main pulmonary trunk (Fig. 3).

Although the mass was consistent with teratoma on CT, it required histopathological diagnosis. Echocardiography-guided fine needle aspiration biopsy was performed. Histopathological findings confirmed diagnosis of a benign teratoma (Fig.4).

The mass was removed at a university hospital and the patient is performing well now. Postoperative chest radiography and tomography were normal.

## Discussion

Mediastinal teratomas are frequently discovered incidentally on chest radiography performed for other reasons (7). Rupture of a mediastinal cystic teratoma is rare but is always symptomatic. Common clinical symptoms following rupture are haemoptysis and chest pain, and treatment of the ruptured tumors is essential because of development of acute respiratory distress. Occasionally, the mass effect on adjacent structures or the functional activity of dermal derivatives may cause signs and symptoms.

The aetiology of mediastinal teratomas rupture is still controversial although ischaemia, infection and inflammation have been proposed as causes. Tumor size and tumor wall thickness are not significant predisposing factors for tumor rupture. Inhomogeneity of the internal components of tumor on CT is the most important factor for rupture tendency (6). Besides, cystic teratomas can produce proteolytic or digestive enzymes, leading to adhesion and erosion of surrounding structures (8).

In our case, we discovered the mass incidentally on the chest plain radiography. Tumor size was large, but the patient was asymptomatic. The mass effect on adjacent structures did not cause any signs or symptoms. Although the mass exhibited inhomogeneous internal density on CT, surprisingly it was unruptured.

Although benign teratoma is histopathologically non-malignant, surgical resection is recommended because of its life-threatening nature and potential to rupture.

**Address for Correspondence:** Dr. Cengiz Öztürk, Department of Cardiology, Air Force Hospital/ Eskişehir
Tlf: +90 222 2204530 (Ext 4170) , Fax: +90 222 2300191 , E- mail: cisozt@yahoo.com

## References

1. Roberts JR, Kaiser LR. Acquired lesions of the mediastinum: Benign and malignant. In: Fishman AP, Elias JA, Fishman JA, Grippi MA, Kaiser LR, Senior RM, editors. Fishman's Pulmonary Diseases and Disorders, 3rd ed. New York: McGraw-Hill; 1998. p.1509-38.
2. Fraser RS, Pare JAP, Fraser RG, et al. The normal chest. In: Fraser RG, Pare JAP, Pare PD, Fraser RS, Genereux GP, editors. Diagnosis of Diseases of the Chest. 3rd ed. Philadelphia, PA: WB Saunders Co; 1991. p.1-314.
3. Verhaeghe W, Meysman M, Noppen M, et al. Benign cystic teratoma: an uncommon cause of anterior mediastinal mass. Acta Clin Belg 1995; 50: 126-9.
4. Gonzalez-Crussi F. Extragonadal teratomas: teratomas of the mediastinum. In: Hartmann WH, Cowan WR, editors. Atlas of Tumor Pathology, Series II. Fascicle 18: Extragonadal Teratomas. Washington DC: Armed Forces Institute of Pathology; 1982. p.77-94.
5. Moeller KH, Rosado-de-Christenson ML, Templeton PA. Mediastinal mature teratoma: imaging features. Am J Roentgenol 1997; 169: 985-90.
6. Choi SJ, Lee JS, Song KS, Lim TH. Mediastinal teratoma: CT differentiation of ruptured and unruptured tumors. Am J Roentgenol 1998; 171: 591-4.
7. Lewis BD, Hurt RD, Payne WS, et al. Benign teratomas of the mediastinum. J Thorac Cardiovasc Surg 1983; 86: 727-31.
8. Southgate J, Slade PR. Teratodermoid cyst of the mediastinum with pancreatic enzyme secretion. Thorax 1982; 37: 476-7.

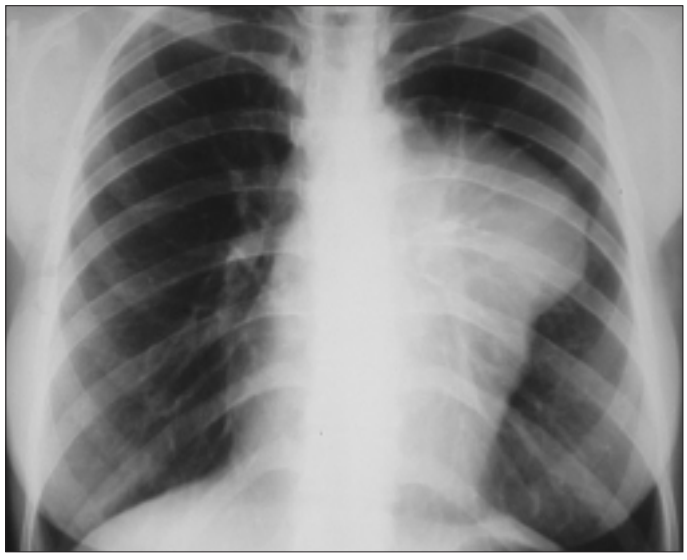

**Figure 1. Chest radiography of the case before operation**

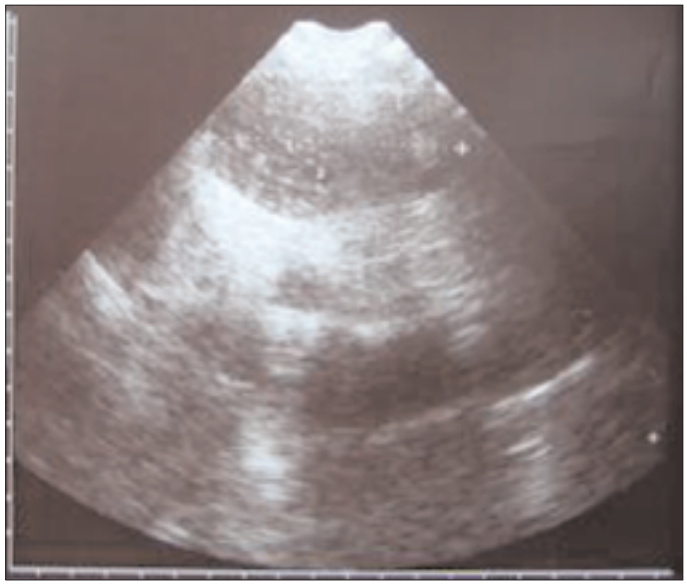

**Figure 2. Echocardiographic image of paracardiac heterogeneous mass**

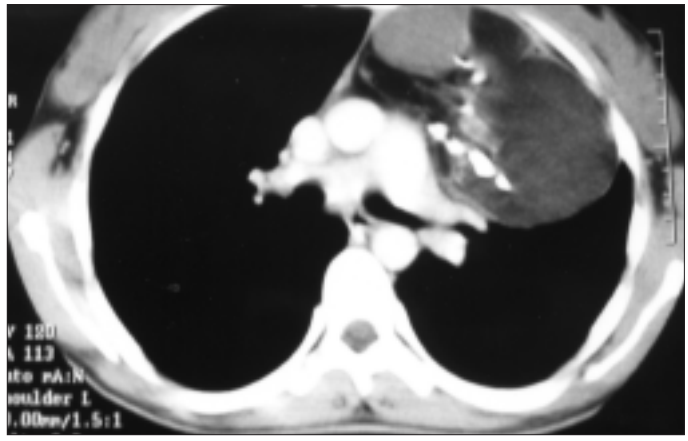

**Figure 3. Thoracal computerized tomography image of teratoma**

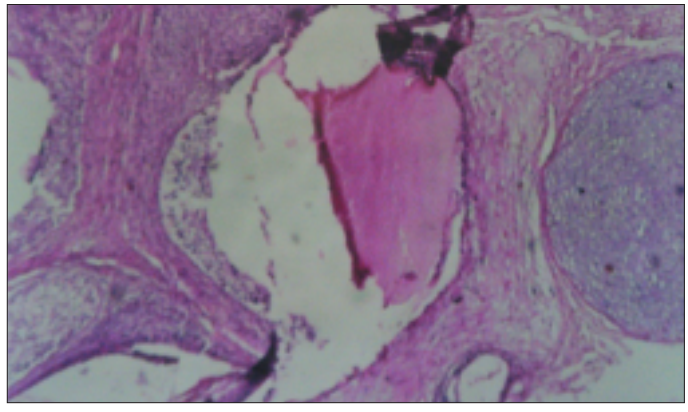

**Figure 4. Histopathological section of teratoma**