Krasuska Beata, Bal Wioletta, Topyła Weronika, Bąk Tomasz, Trojnar Michał. Echocardiographic assessment of mediastinal tumor - a case report. Journal of Education, Health and Sport. 2018;8(8):695-700. eISNN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.1344902
http://ojs.ukw.edu.pl/index.php/johs/article/view/5785

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part b item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eissn 2391-8306 7

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 02.08.2018. Revised: 03.08.2018. Accepted: 14.08.2018.

Echocardiographic assessment of mediastinal tumor - a case report

Beata Krasuska[1], Wioletta Bal[1], Weronika Topyła[1], Tomasz Bąk[2], Michał Trojnar[3]

1- Student's Scientific Group of Cardiology, Medical University of Lublin.
2- Chair and Clinic of Maxillofacial Surgery, Medical University of Lublin
3-Chair and Department of Cardiology, Medical University of Lublin

ABSTRACT

The mediastinum is the central area of the thoracic cavity which is divided into anterior, middle and posterior section. Medisatinal masses are usually asymptomatic. They can be detected accidentally in planned imaging studies. Echocardiography is safe, cheap, quick and non-invasive investigation, which can be useful in the diagnosis of this type of changes.

Key words: echocardiography, mediastinum, tumor

INTRODUCTION

Mediastinal masses could be both benign and malignant. They may have their origin in any tissue in the mediastinum or be a metastatic tumor. The most common mediastinal masses are cysts, thymoma and neurogenic tumors [1]. Thymoma, teratoma, lymphoma or goitre are typically found in anterior mediastinum [2]. The middle of mediastinum often contains cysts and neurogenic tumors are usually in posterior mediastinum [3]. Mediastinal tumors are mostly asymptomatic. Sometimes they cause non-characteristic symptoms, such as cough, wheezing during breathing, stridor, dysphagia, odynophagia, hoarseness, shortness of breath, pain and a feeling of pricking in the chest [4]. Systemic deficiencies may suggest tumor malignancy. Fever, night sweats and weight loss are characteristic in the course of lymphoma Paraneoplastic syndromes - myasthenia gravis can be present in the case of thymoma [5]. The presence of a mediastinal tumor may cause the superior vena cava syndrome, which is an obstruction of vena cava[6]. Mediastinal tumors are usually discovered accidentally in plain chest X-rays or other more accurate imaging studies, such as CT or MRI [7].

Mediastinal anatomy and functional characterization of mediastinal masses can be accurately showed using echocardiography without nephrotoxic contrast agents and ionizing radiation. Despite this, the role of echocardiography in the detection and assessment of mediastinal tumours is insignificant [8].

CASE REPORT

A 75-year-old patient was admitted to the Department of Cardiology on March 5th, 2018. The patient was treated for dilated cardiomyopathy (NYHA III) and had CRT-D implanted in 2013. He was referred to the clinic due to repeated sound alarms of the device. The ICD check-up showed the exhaustion of the CRT battery. The patient was qualified for an urgent replacement and the procedure was performed without complications on March 13th, 2018. Due to the increased inflammatory parameters (CRP 164,2 on March 14th, 2018) further diagnostics was performed. There were no abnormalities in biochemical blood tests except for elevated CRP. Blood and urine cultures were negative. The chest X-ray showed fluid in the left pleural cavity, the shade over the fluid - the atelectal zone (Fig. 1). Echocardiographic examination revealed a large solid and cystic tumor (12 x 8 cm) in the anterior mediastinum (Fig. 2), which did not limit the function of the heart (EF 66%) and a large amount of fluid in the left pleura. The chest CT was performed. The examination showed an inconsistent, well-limited tumor (127 x 110 x 138 mm) with policyclic outlines in the anterior mediastinum (Fig. 3). The contrast enhancement was heterogeneous.
The tumour was accidentally found in December 2017 during echocardiography. There was no surgical treatment proposal then.
The tumor shows signs of progression and the patient was qualified for a thoracic surgery.

DISCUSSION

Slowly growing mediastinal tumors may not give any typical symptoms. If symptoms are present they are usually uncharacteristic and can include cough, dyspnea, chest pain and fever. Anterior mediastinal tumours account for 50% of all mediastinal masses [9]. They can communicate with the pleural or pericardial space [10]. Echocardiography, which is a useful tool for diagnosing heart diseases, sometimes exposes pathological masses located in the mediastinum. These may be random discoveries in heart imaging. They require extended diagnostics and sometimes surgical treatment.

REFERENCES:

1. Laurent F, et al. Mediastinal masses: diagnostic approach. Eur Radiol. 1998;8:1148–1159. doi: 10.1007/s003300050525. [PubMed]
2. Tomiyama N, et al. Anterior mediastinal tumors: diagnostic accuracy of CT and MRI. Eur J Radiol. 2009;69:280–288. doi: 10.1016/j.ejrad.2007.10.002. [PubMed]
3. Duwe BV, et al. Tumors of the mediastinum. Chest. 2005;128:2893–2909. doi: 10.1378/chest.128.4.2893. [PubMed]

4. Shields TW. Overview of primary mediastinal tumors and cysts. In: General Thoracic Surgery, 6th ed, Shields TW, LoCicero III J, Ponn RB, Rusch VW (Eds), Lippincott Williams & Wilkins, Philadelphia 2005. Vol 2, p.2489
5. Lardinois D, Weder W. Diagnostic strategies in mediastinal mass. In: Pearson's Thoracic & Esophageal Surgery, 3rd ed, Patterson GA, Pearson FG, Cooper JD, et al (Eds), Churchill Livingstone, Elsevier, Philadelphia 2008. Vol 1, p.1506.
6. García Mónaco R, Bertoni H, Pallota G, Lastiri R, Varela M, Beveraggi EM, Vassallo BC. Use of self-expanding vascular endoprostheses in superior vena cava syndrome.Eur J Cardiothorac Surg. 2003;24(2):208 [PubMed]
7. Su S, Colson YL. Overview of benign and malignant mediastinal diseases. In: Adult Chest Surgery, 2nd ed, Sugarbaker DJ, Bueno R, Colson YL, et al (Eds), McGraw-Hill Education, New York 2015. p.1234
8. Wei-Wei Zhou, Hong-Wei Wang, Nan-Nan Liu, Jing-Jing Li, Wei Yuan, Rui Zhao, Liang-Bi Xiang, Miao Qi, Diagnosis of Malignancy of Adult Mediastinal Tumors by Conventional and Transesophageal Echocardiography. In: Chin Med J (Engl). 2015 Apr 20;128(8):1047-51. doi: 10.4103/0366-6999.155083
9. Juanpere S, Cañete N, Ortuño P, Martínez S, Sanchez G, and Bernado L, A diagnostic approach to the mediastinal masses, 2012 Dec 6. doi: 10.1007/s13244-012-0201-0 [PubMed]
10. Fraser AG, Pare JAP, Pare PD, Fraser AS, Genereux GP. Diagnosis of diseases of the chest. Philadelphia: Saunders, 1988:1607-1608

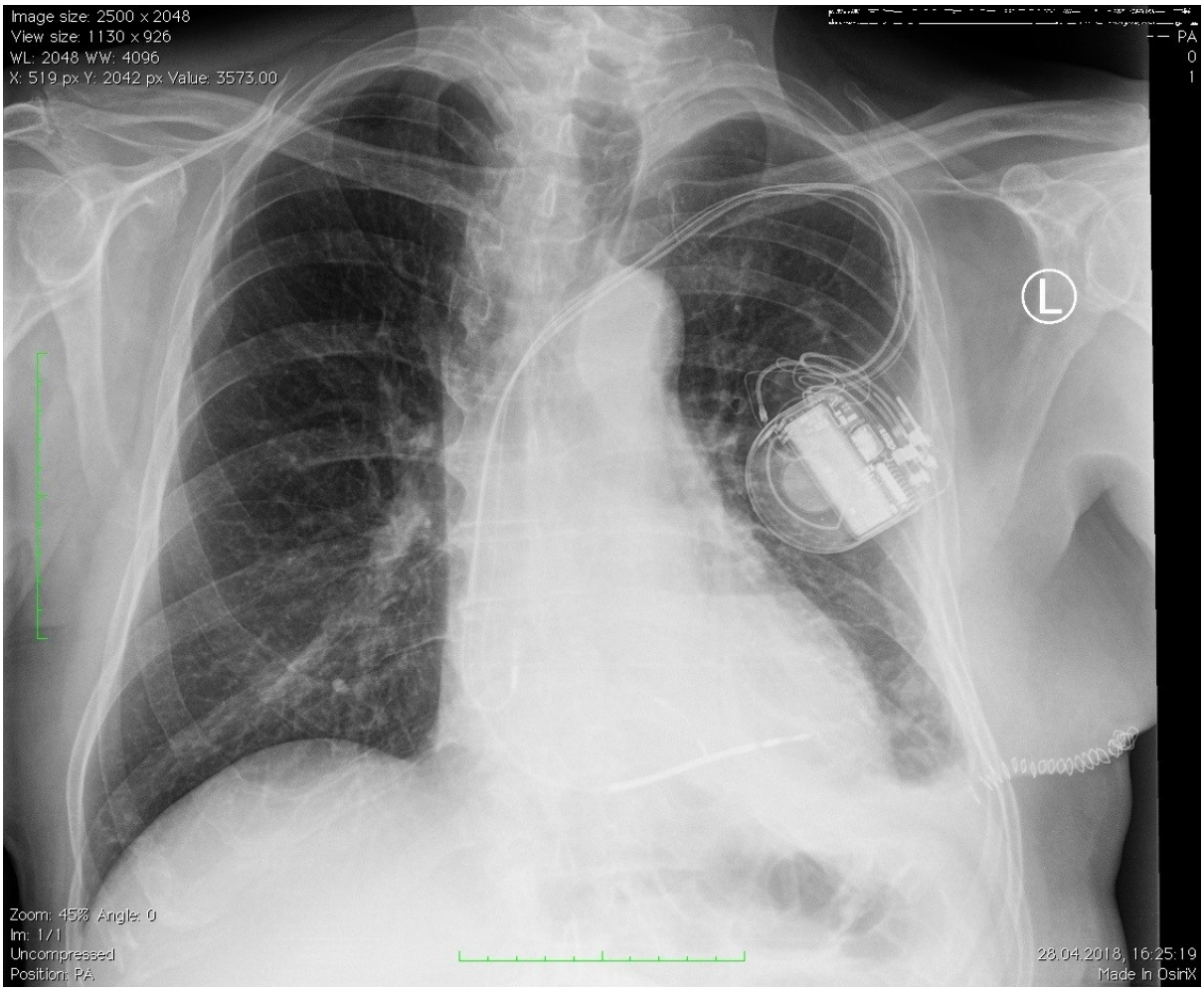

Fig. 1. Fluid in the left pleural cavity

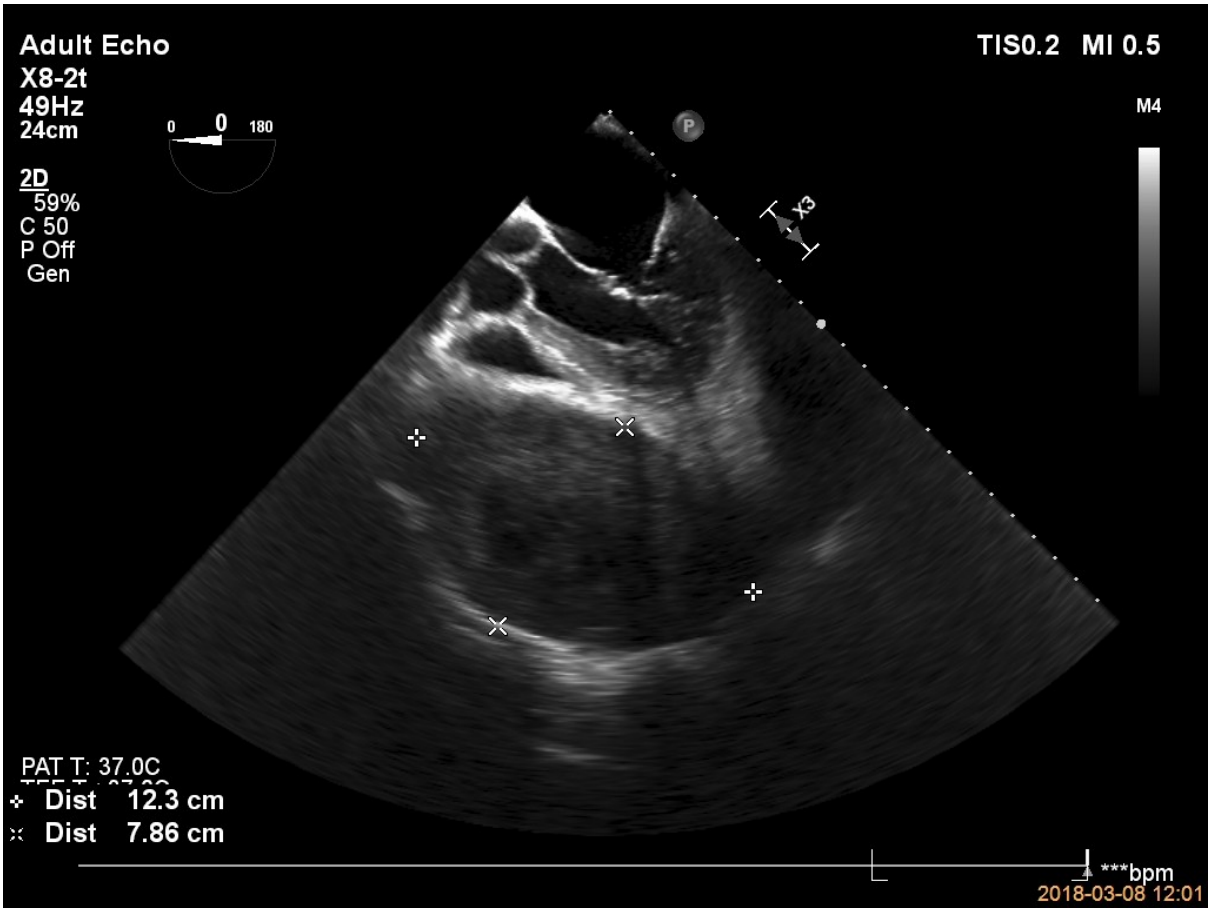

Fig. 2. Large tumor in the anterior mediastinum

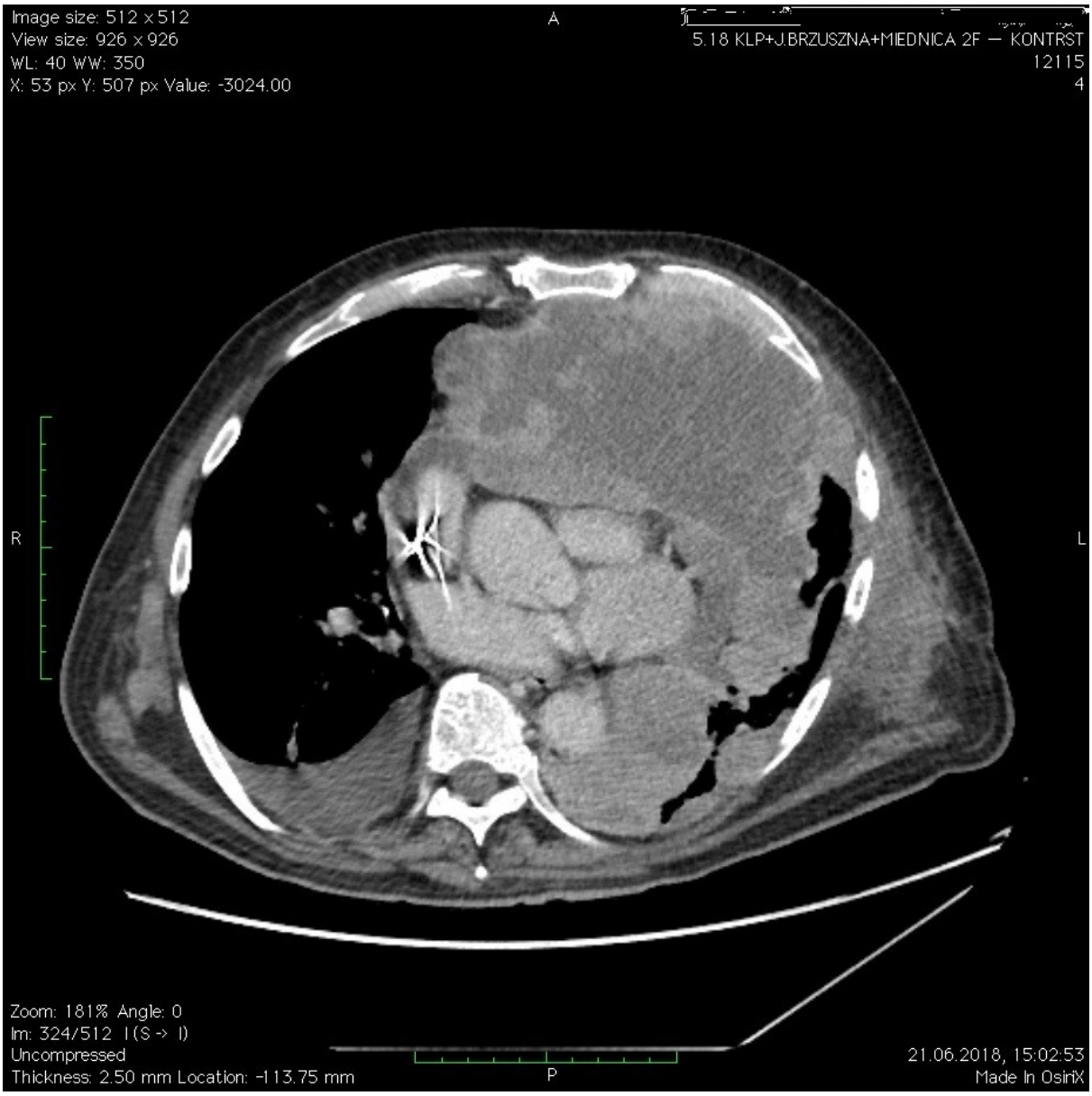

Fig. 3.Tumor with policyclic outlines in the anterior mediastinum