Cukurova Medical Journal
ÇUKUROVA ÜNİVERSİTESİ TIP FAKÜLTESİ

Cukurova Med J 2023;48(4):1412-1415
DOI: 10.17826/cumj.1242442

LETTER TO THE EDITOR

A case of squamous cell carcinoma diagnosed from an intracardiac mass in a chronic obsturctive pulmonary disease patient presenting with dyspnea

Dispne ile başvuran bir kronik obstruktif akciğer hastasında intrakardiyak kitleden tanı alan skuamoz hücreli karsinom olgusu

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To the Editor,

Primary cardiac tumor is a rare disease with an incidence ranging from 0.001% to 0.03%. Cardiac metastases are more common than primary tumors. The most frequently metastasized tumors are lung, breast, kidney cancers and melanomas[3]. Several published case reports have documented non-small cell lung cancer (NSCLC) patients with neoplastic heart invasion. However, the number of small cell lung cancer (SCLC) cases with neoplastic cardiac invasion is limited[4]. In this article, we present our case of non-small cell lung cancer with cardiac invasion who presented to the emergency department with dyspnea.

A 55-year-old male patient presented to the emergency department(ED) with dyspnea and stabbing chest pain for 2 days. In his past medical history of the patient, it was learned that he had Chronic Obstructive Pulmonary Disease and ex-smoker. On admission to the ED, the patient's heart rate was 120/min, blood pressure was 100/60 mmHg, respiratory rate was 22/min, O2 saturation level was 98% while O2 was taking 2 Lt/min, and body temperature was 37.5 °C. The patient's electrocardiography was sinus rhythm and 118/min. He also had ventricular extra beats. Inblood test results, Cardiac Troponin T (hsTnT) is normal (3 pg/mL, normal range: 0-14 pg/mL), elevated C-reactive protein level (180 mg/L, normal range: <3 mg/L), elevated D-Dimerlevel (8 mg/L, normal range: <0.5 mg/L), normal liver and kidney function tests, neutrophilic leukocytosis and Hemoglobin 9.7 g/dLwere detected. Bedside Transthoracic Echocardiography (TTE) showed normal left ventricular contraction, Ejection Fraction: 60%, mild to moderate mitral and tricuspid regurgitation. In addition, the image of a hyperechoic, irregularly bordered mobile mass of 5.0x3.2 cm covering the left atrium was observed. Although pulmonary embolism was not detected in the pulmonary CT Angiography of the patient, a mass image was observed in the left hilar area, obliterating the left upper lobe bronchus and left pulmonary veins, and almost completely filling the left atrium. Significant areas of emphysema were observed in both lung parenchyma, especially in the upper lobes. Advanced pleural effusion in the left pleural space and focal pneumothorax in the anterior were observed.

The patient was interned in the Cardiology Intensive Care Unit and monitored. Transesophageal Echocardiography (TEE) revealed a hyperechoic mass of 5.1*3.0 cm, covering the left atrium and invading the lateral wall, oriented to the mitral valve, with septa and some septa in and out of the LV. Mild mitral and tricuspid regurgitation was observed.

The patient was evaluated by the cardiac heart team. The decision for high-risk cardiac surgery was made for the patient who was considered inoperable by the

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Received: 25.01.2023 Accepted: 30.07.2023

thoracic surgeon. The patient was discharged by the own decision. The patient who applied to the emergency department with syncope 2 weeks later in the follow-up, diffuse millimetric diffusion restrictions were detected in the brain diffusion MRI. In TTE performed for the etiology of ischemic SVO, the image of a thrombus on the mass and engaged to the mitral valve was observed.

The patient refused intervention due to the high-risk nature of the surgery and was transferred to the oncology department with the diagnosis of squamous cell carcinoma as a result of the sample taken by bronchoscopy due to involvement in the hilar region. Paclitaxel and carboplatin treatment were given to the patient. In addition, anticoagulant therapy was started. The patient died 3 months after the diagnosis.

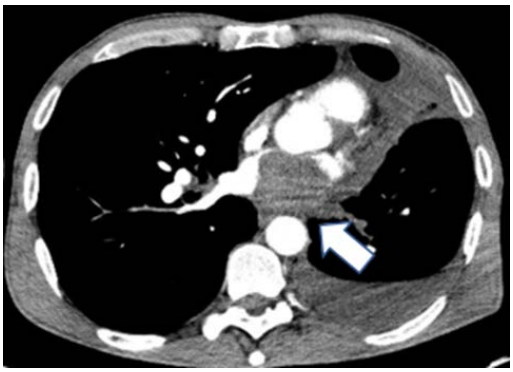
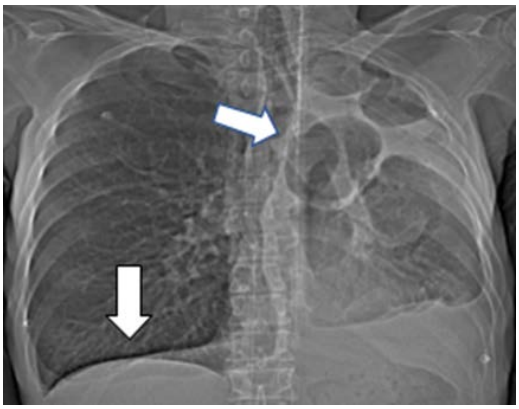


Figure 1.



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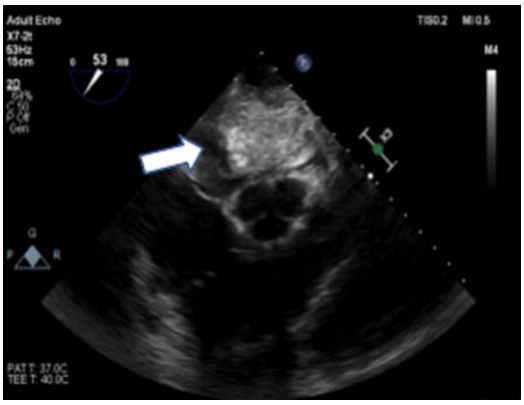

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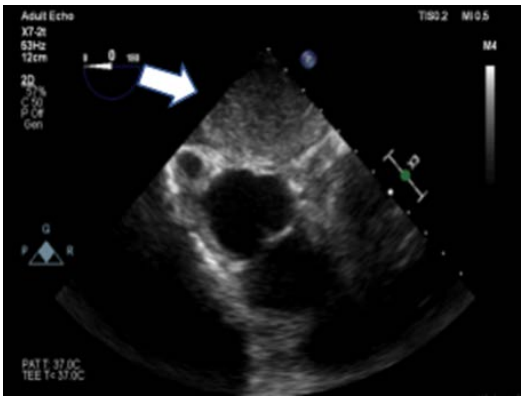

Figure 4.

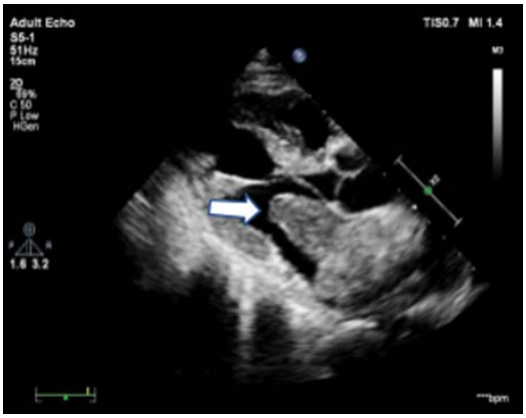

Figure 5.

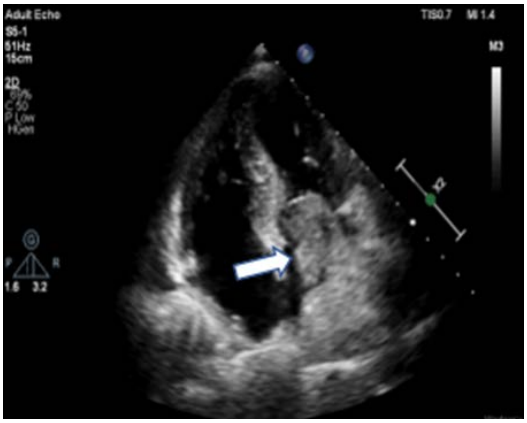

Figure 6.

Primary tumors of the heart are seen at a rate of 0.02%, secondary tumors of the heart, that is, metastases, are seen 20 times more frequently[2]. 90% of primary heart tumors are benign and 10% are malignant[1]. While myxoma, papillary fibroelastoma, rhabdomyoma and lipoma are examples of primary benign tumors, sarcoma (undifferentiated sarcoma, angiosarcoma, leiomyosarcoma, rhabdomyosarcoma and synovial sarcoma), germ cell tumors (teratoma, yolk sac tumor) and lymphoma can be given as examples of primary malignant tumors[5].

Imaging methods are gaining importance in the diagnosis of tumors. Although the increase in heart size can be detected easily and cost-effectively by chest X-ray, it is non-specific as it can be confused with pathologies such as heart failure and pericardial effusion. TTE and TEE are the methods that can be used most easily for the diagnosis of tumors[6]. It can give information about the structure of the tumor, its dimensions, and its relationship with cardiac structures. Thrombus and vegetations should be considered in the differential diagnosis.

CT angiography is helpful in excluding pulmonary embolism, aortic dissection and other etiological causes in patients presenting with dyspnea and chest pain, and in the evaluation of the vascularization and calcification of the tumor[7]. Cardiac MRI is the best tool for the characterization of the tumor, myocardial and pericardial infiltration, and the evaluation of its relationship with the cardiac cavities. However, its use is limited due to its high cost and difficult accessibility[8].

Although metastatic tumors are more common, the most common tumors that metastasize to the heart are lung cancer, breast cancer, melanoma, leukemia and lymphoma. Cardiac and pericardial involvement can occur by lymphatic, hematogenous or by invasion of the adjacent tumor, as in our case. Neoplastic cardiac invasion is one of the morbid complications of lung cancer. Autopsy reports have shown that up to 7% of all cancer cases have cardiac metastases and up to 10% of bronchogenic tumors have atrial invasion[9].

Radical surgical resection in benign tumors and localized sarcomas, chemotherapy in patients with widespread disease, radiotherapy and chemotherapy in lymphoma are the main treatment methods. Because of the fatal outcome of intraatrial tumors, the standard treatment of choice in such cases is complete block resection of the primary tumor and left atrium, with or without major vessel invasion[10]. In our case, although the mass obliterated the left upper lobe bronchus and left pulmonary veins, surgery was decided. However, when a patient is not suitable for surgery, as in our case, alternative treatments such as radiotherapy and chemotherapy are needed.

Author Contributions: Concept/Design : YA, ÖK; Data acquisition: ÖK, ATŞ; Data analysis and interpretation: YA; Drafting manuscript: ÖK; Critical revision of manuscript: YA; Final approval and accountability: ÖK, ATŞ, YA; Technical or material support: ÖK, YA; Supervision: ATŞ, YA; Securing funding (if available): n/a.
Ethical Approval: Since this study is a case report, an ethical certificate of approval is not required. Written informed consent was obtained from the patient who agreed to take part in the study.
Peer-review: Editorial review.
Conflict of Interest: The authors declare no competing interest.
Financial Disclosure: This study received no funding.

REFERENCES

1. Poterucha TJ, Kochav J, O'Connor DS, Rosner GF. Cardiac tumors: clinical presentation, diagnosis, and management. Curr Treat Options Oncol. 2019;20:66.
2. Campisi A, Ciarrocchi AP, Asadi N, Dell'Amore A. Primary and secondary cardiac tumors: clinical presentation, diagnosis, surgical treatment, and results. Gen Thorac Cardiovasc Surg. 2022;70:107-15.
3. Pino PG, Moreo A, Lestuzzi C. Differential diagnosis of cardiac tumors: General consideration and echocardiographic approach. J Clin Ultrasound. 2022;50:1177-93.
4. Pham N, Bonnen MD, Ghebre YT. Silent neoplastic cardiac invasion in small cell lung cancer: a case report and review of the literature. Am J Case Rep. 2018;19:619-22.
5. Abels B, Pfeiffer S, Stix J, Schwab J. Multimodal imaging for the assessment of a cardiac mass - a case of primary cardiac sarcoma. J Radiol Case Rep. 2017;11:11-9.

6. Restivo L, De Luca A, Fabris E, Pagura L, Pierri A, Korcova R et al. A 20-year experience in cardiac tumors: a single center surgical experience and a review of literature. J Cardiovasc Med (Hagerstown). 2022;23:722-7.
7. Lichtenberger JP 3rd, Carter BW, Pavio MA, Biko DM. Cardiac neoplasms: radiologic-pathologic correlation. Radiol Clin North Am. 2021;59:231-42.
8. Wang H, Sun Z, Xu L. Cardiovascular magnetic resonance shows promise in grading cardiac tumors. Int J Cardiol. 2021;332:225-6.
9. Milovanovic IS, Stjepanovic M, Mitrovic D. Distribution patterns of the metastases of the lung carcinoma in relation to histological type of the primary tumor: An autopsy study. Ann Thorac Med. 2017;12:191-8.
10. Lee P, Kishan AU. Radiotherapy is effective for a primary lung cancer invading the left atrium. BMJ Case Rep. 2012;2012:bcr2012006667.