

Cardiac Metastasis from a Lung Tumor

Majda Ankri*, Fatima Zohra Benbrahim, Amine Naggar, Hatim Essaber, Soukaina Alloui, Asaad El Bakkari, Hounayda Jerguigue, Youssef Omor and Rachida Latib

Radiology Department, National Institute of Oncology, Ibn Sina University Hospital Center, Rabat, Morocco

***Corresponding Author:** Majda Ankri, Radiology Department, National Institute of Oncology, Ibn Sina University Hospital Center, Rabat, Morocco.

Received: January 01, 2024; **Published:** March , 2024

Abstract

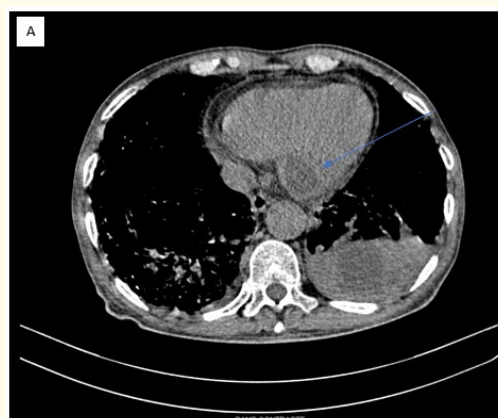
Secondary cardiac tumors are typically associated with an advanced stage of the primary tumor and a poor prognosis. In this report, we describe a case of a 72-year-old patient with pulmonary adenocarcinoma with multiple secondary localizations including a tissular nodule within the wall of the left ventricle of the heart, revealed on computed tomography. This case underscores the potential for left heart invasion by lung cancer and the associated poor prognosis. It highlights the crucial role of comprehensive staging and monitoring for possible cardiac metastases in lung cancer patients, as early detection and effective treatment can substantially enhance patient outcomes.

Keywords: Cardiac Metastasis; Lung Cancer; Computed Tomography; Diagnosis

Introduction, Case Report and Discussion

A 72-year-old patient with a history of smoking, presented to the emergency room for dyspnea, associated with anorexia and weight loss.

A computed tomography (CT) was performed, revealing a left lower lobe pulmonary tumor (histologically confirmed to be an adenocarcinoma), associated with to a nodule observed within the left ventricular wall of the heart, well-defined, exhibiting the same density as the primary tumor (Figure 1). Additionally, the scan revealed multiple secondary locations: mediastinal lymphadenopathies, adrenal nodules, and aggressive looking bone lesions.



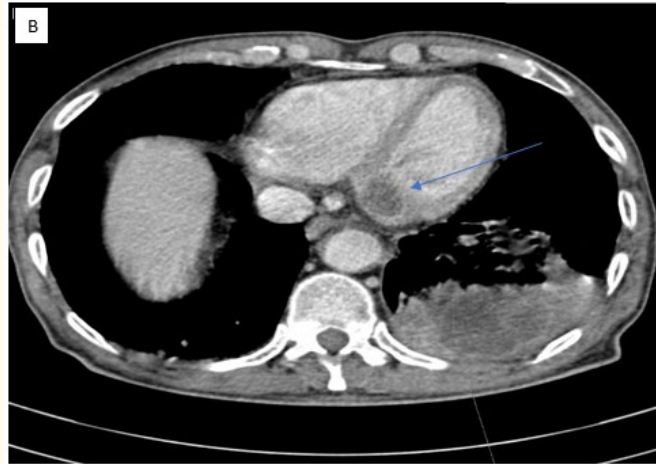


Figure 1: Axial CT scan image in the mediastinal window before (A) and after contrast (B), showing the secondary mass of the left ventricle (Arrows), due to the left lower lobe pulmonary adenocarcinoma (Arrowheads).

Tumors typically reach the heart through direct expansion, or by metastasizing to it through various routes, such as the lymphatic system, the bloodstream, or by following the venous pathway, particularly the inferior vena cava [1].

Cardiac metastases are rare but represent a life-threatening condition, leading to various complications such as pulmonary venous outflow obstruction, cardiac tamponade, venous outflow obstruction, and myocardial infarction [2].

Clinically, they manifest as shortness of breath, asthenia, pulmonary hypertension, right ventricular failure, and ultimately death.

Ventricular arrhythmias are also commonly observed. These arrhythmias are harmful and necessitate urgent treatment to prevent sudden cardiac arrest [3,4].

Complete atrioventricular block has also been described and can occur due to tumor invasion into the atrioventricular node, leading to serious symptoms such as syncope and dizziness.

A further reported complication is the formation of a thrombus in the pulmonary artery, posing a high risk of sudden cardiac arrest due to arterial obstruction or inflow into the mitral valve, or massive tumor embolism [5].

Given the grave prognosis associated with cardiac metastases, their management must be meticulous and may include surgical options (complete or partial resection) in combination with chemotherapy or radiotherapy [6].

Unfortunately, this was not applicable in our case due to the advanced stage of the disease, leading to the exclusion of surgery from the outset. The only viable therapeutic alternative was radiotherapy and chemotherapy. However, due to numerous side effects, our patient couldn't endure more than two courses of chemotherapy and tragically succumbed to cardiac arrest [7].

Conclusion

In conclusion, secondary cardiac tumors are rare but serious clinical entities that can have a significant impact on a patient's prognosis and quality of life. The case presented here highlights the potential for left heart invasion by lung cancer and the associated poor prognosis.

It emphasizes the importance of thorough staging and monitoring of lung cancer patients for possible cardiac metastases, as early detection and effective treatment can significantly improve patient outcomes. It is important for healthcare professionals to be aware of the potential complications of cardiac invasion by secondary tumors to provide appropriate management and improve patient outcomes.

Conflict of Interest Statement

No conflicts of interest to be declared.

Funding Support

None.

Ethical Approval

No ethical approval is required for de-identified single case reports based on our institutional policies.

Consent

Written informed consent was obtained from the patient's legally authorized representatives.

Guarantor

Dr. Majda Ankri is the guarantor for this publication.

Bibliography

1. Dedelias P, *et al.* "Deep hypothermia and circulatory arrest in the surgical management of renal tumors with cavoatrial extension". *Journal of Cardiac Surgery* 24.6 (2009): 617-623.
2. Goto T, *et al.* "Lung adenocarcinoma with peculiar growth to the pulmonary artery and thrombus formation: report of a case". *World Journal of Surgical Oncology* 10 (2012): 16.
3. Kozower BD, *et al.* "Special treatment issues in non-small cell lung cancer: Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines". *Chest* 143.5 (2013): e369S-e399S.
4. Boffa DJ, *et al.* "Data from The Society of Thoracic Surgeons General Thoracic Surgery database: the surgical management of primary lung tumors". *Journal of Thoracic and Cardiovascular Surgery* 135 (2008): 247-254.
5. R J Korst and T K Rosengart. "Operative strategies for resection of pulmonary sarcomas extending into the left atrium". *Annals of Thoracic Surgery* 67.4 (1999): 1165-1167.
6. Nakagawa K, *et al.* "Surgical experience of the three cases of lung cancer with polypoid type left atrial infiltration". *The Japanese Association for Thoracic Surgery* 33.10 (1985): 106-112.
7. Klepetko W, *et al.* "T4 lung tumors with infiltration of the thoracic aorta: is an operation reasonable?" *Annals of Thoracic Surgery* 67.2 (1999): 340-344.

Volume 10 Issue 5 May 2023

©All rights reserved by Majda Ankri, *et al.*