



Left Homonymous Hemianopsia as the First Presentation of Left Atrial Mass

Domenico Acanfora¹, Bernardo Lanzillo¹, Valentina Carlomagno², Chiara Acanfora¹, Giulio Montefusco¹, Pietro Scicchitano³ and Gerardo Casucci²

¹ ICS Maugeri, Institute of Care and Scientific Research, Institute of Telesse Terme (BN), Italy

² San Francesco Hospital, Telesse Terme (BN), Italy

³ Section of Cardiovascular Diseases, Department of Emergency and Organ Transplantation, University of Bari, School of Medicine, Bari, Italy

*Corresponding e-mail: domenico.acanfora@icsmaugeri.it

ABSTRACT

We report the case of an 81-year-old man with sudden incomplete left hemianopsia. Brain computed tomography (CT) showed a right occipital hypodensity which did not seem related to the consequences of embolic stroke as atrial fibrillation consequence (the patients suffered from permanent atrial fibrillation, CHA2DS2-VASc score=5, but rather showed the characteristics of ischemic lesion due to other causes. Therefore, diagnostic work up was performed and revealed advanced non-small cell lung cancer invading left atrium through upper pulmonary veins. No others secondary lesions were detected. Cardiac involvement in cancer is an unusual finding in clinical practice and rarely stroke is the first manifestation. There are no reported cases of neoplastic embolism to the brain from cancer in the left atrium whose origin is into the lung. The patient started palliative chemotherapy. This report highlights the need for a holistic approach in medicine as the obvious diagnosis could not be the right one.

Keywords: Hemianopsia, Lung cancer, Left atrial mass, Atrial fibrillation

INTRODUCTION

Stroke is a complex disease whose pathogenesis is multifactorial and related to different etiologies. Cardiogenic embolism due to embolisms from blood coagula explains about 15%-30% of ischemic strokes [1]. Nevertheless, the content of an embolus can be different from platelets, blood cells, etc. Rarely, gases, fluids, cholesterols, and even neoplasms can play the role of embolic constituents.

Cancer metastases to heart are more common than primary cardiac tumors. Autoptic studies reported cardiac metastases in about 25% of patients with lung cancer [2].

The lymphatic pathway is the main way for metastases to reach cardiac structure, but the hematic is also a further possibility for cancer to move forward. The clinical consequences of the cardiac invasion, above all into the left chambers, are usually extremely dangerous: cardiac tamponade, myocardial infarction, pulmonary veins embolism, and ventricular arrhythmias.

Cerebral stroke as a result of systemic embolization from the left heart may sometimes represent the first clinical presentation. We described the case of a patient with atrial fibrillation, admitted to the Emergency Department for sudden hemianopsia.

Case Report

An 81 year old man was admitted to the Emergency Department for the sudden occurrence of left hemianopsia. His clinical history revealed systemic arterial hypertension, permanent atrial fibrillation, previous pacemaker implantation (age 78 years). His daily therapy included: bisoprolol 2.5 mg od, telmisartan 80 mg od, rivaroxaban 15 mg od, and furosemide 25 mg od. He referred progressive weight loss of about 15 Kg, during the last 3 months and occasional cough. Neurological examination only showed left hemianopsia (National Institutes of Health Stroke Scale=8).

Brain computed tomography (CT) showed left occipital hypodensity, according to clinical findings (Figure 1).

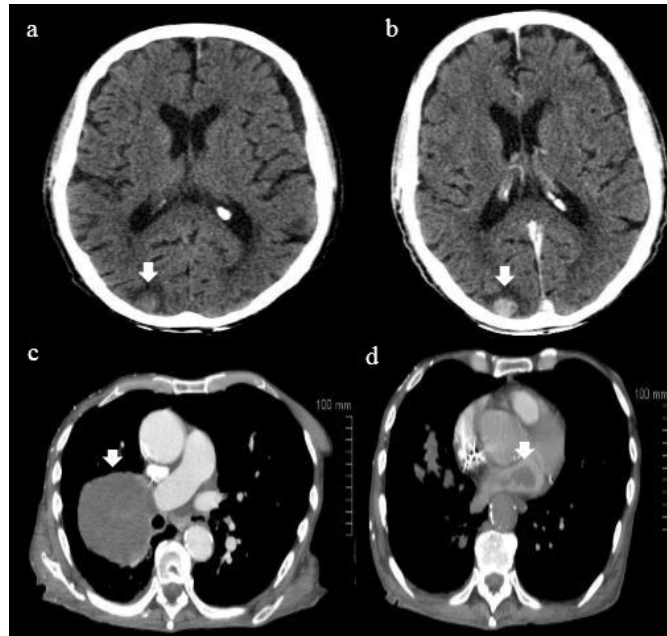


Figure 1 Brain computed tomography (CT)

The ECG showed the presence of atrial fibrillation (mean heart rate: 65 bpm) spread to ventricles by the pacemaker. The patient assured that he get Rivaroxaban every day soon after lunch. Echo-Doppler of supra-aortic vessels showed no significant stenosis. Chest X-ray revealed a voluminous right hilar mass, suggesting the presence of possible lung cancer (Figure 2).

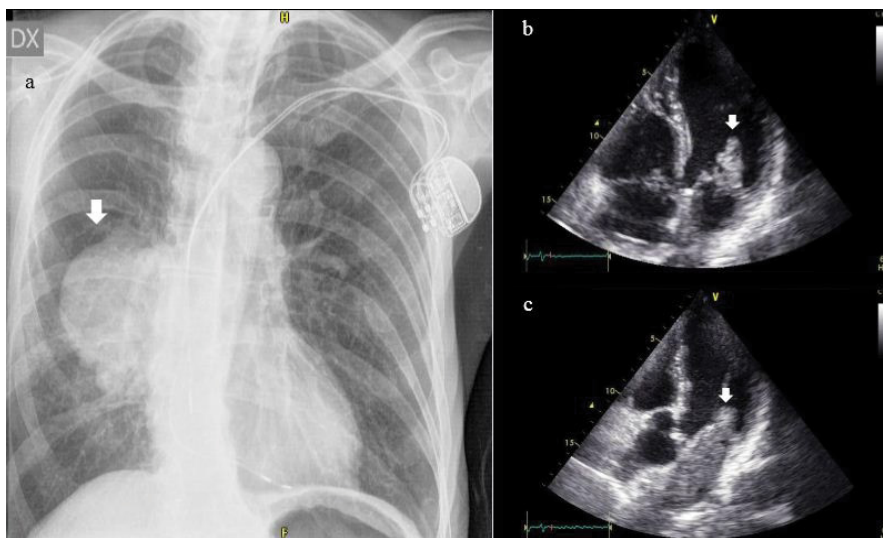


Figure 2 ECG of the patient

Therefore, a total body CT was performed which confirmed the metastatic origin of the brain hypodensity and an intense post-contrastographic enhancement (Figure 1). Furthermore, it confirmed the presence of a large right lung mass (150 mm × 60 mm) with irregular borders, extending into the left atrium through the pulmonary veins. No other metastatic lesions were found (Figure 1).

Furthermore, transthoracic echocardiography evidenced that the tumor that had invaded the left atrial was a mobile mass (about 64 mm × 35 mm) and was protruding through the mitral valve into the left ventricle during diastole (Figure 2).

A high steroid dosage treatment was started (methylprednisolone 1 gr od for 5 days). During the next days, neurological conditions progressively improved, but his high risk contraindicated thoracic surgery. The patient died because of cardiac arrest after 28 days.

DISCUSSION AND CONCLUSION

Patients suffering from cancer are prone to develop strokes or peripheral embolisms due to different reasons: hypercoagulability, infections, and anticancer therapies. Despite rare, some patients can experience a stroke and peripheral arterial occlusion due to neoplastic emboli, above all in case of lung cancer. Most of these events occur with typical contralateral neurological manifestation or in the form of incidental detection of brain ischemic lesions during imaging technique used in asymptomatic subjects. Lung cancer is able to enter the arterial circle through the direct invasion of the heart muscle or through the pulmonary veins and the left atrium. Furthermore, extension through lymphatic vessels has also been described. A previous study on 215 patients with lung carcinoma undergone gadolinium enhanced 3D magnetic resonance angiography showed the involvement of the proximal portion of the pulmonary veins and the extension into the left atrium in 9 (4.2%) and 2 (0.9%) subjects, respectively [3]. Another retrospective study on 4,668 patients who underwent pulmonary tumor surgery also showed involvement of the left atrium and pulmonary veins in 25 (0.5%) and 34 (0.7%) patients, respectively [4].

In clinical practice, strokes resulting from tumor metastasis detachment are rare and hard to identify [5]. They can occur either from the continuous movement of the lungs or from the patient's coughing, even if such modalities only cause the breaking of small tumor masses. Otherwise, large and rapidly growing neoplasms can generate larger emboli.

Left homonymous hemianopia as the first presentation of left atrial mass was only reported in patients with atrial mixoma. Differently, our case described a patient who showed left hemianopia as the first clinical manifestation of lung cancer, the nature of the embolus being metastatic and not thromboembolic. To our knowledge, this is the first case of hemianopia related to lung tumor metastasis.

From a practical point of view, this case emphasizes the importance to consider other causes of stroke by performing an accurate and very cost-effective evaluation of the patients in order to better frame them.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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