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Case Report

Superposition of lung metastases of prostate adenocarcinoma on heart as a cardiac metastases: A case report

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ABSTRACT

Background: Primary or secondary malignancies of the heart is rare and difficult to diagnosis. Most cardiac masses are detected incidentally. Positron emission tomography-computed tomography, thorax computed tomography are valuable tools for staging the disease of patient with a history of malignancy. As prognosis is poor, if a physician suspects a suspicious metastasis on heart, it must evaluated carefully in order to prompt therapeutic interventions. Herein. we report a false-positive positron emission tomography-computed tomography finding which was superposition of lung metastasis of prostate adenocarcinoma via confirming by thorax computed tomography and echocardiography.

Case report: A 71-year-old man diagnosed with prostate adenocarcinoma presented with a mass on the posterior-anterior lung graphy after 8 years of the diagnosis date. Positron emission tomography-computed tomography, thorax computed tomography, echocardiography, fine needle aspiration biopsies were performed in order to reveal the final diagnose. Although positron emission tomography-computed tomography revealed a cardiac metastasis, the other tools showed that it was not cardiac metastasis but lung metastasis of prostate adenocarcinoma.

Conclusion: A patient with a history of malignancy and clinical cardiac symptoms must be evaluated carefully in order to prevent a false-positive findings and to prompt therapeutic interventions.

1. Introduction

Cardiac metastases of malignancies are uncommon and the least known issues in oncology. Cardiac metastases are 40 times more common than primary malignancies of the heart and account for 1.5%–21.8%.[1,2] The most common metastatic malignancies of the heart are melanoma, lymphoma. Cardiac metastasis of primary prostate carcinoma is extremely rare.[3,4] Metastatic disease of the heart is a late manifestation of disseminated disease and can present with dysrhythmia and dyspnea.[5] Treatment of metastatic hearth tumors depends on the primary cancer. It has no standard therapy and poor prognosis.[6] Therefore, patients with cardiac symptoms must be evaluated carefully.

Herein, we report a case of patient with mimicking cardiac metastasis of prostate carcinoma on positron emission tomography-computerized tomography scan.

2. Case report

A 71-year-old man diagnosed with prostate adenocarcinoma in 2006 was treated with androgen deprivation therapy (ADT). After two years, when he presented with bone metastases, zoledronic acid threapy launched. There were no any other metastatic lesions while following up. Posterior-Anterior (PA) lung graphy revealed a mass in 2014. His serum prostate specific antigen (PSA) was 287 ng/mL and testesteron was <2,5 ng/mL. In order to evaluate the disease

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course and diagnose the a mass whether it was metastatic lesion or not, positron emission tomography-computed tomography was performed. Positron emission tomography-computed tomography (Fig. 1) disclosed lung metastases and suspicious cardiac metastasis. Then computed tomography (Fig. 2) and echocardiography (Fig. 3) were performed in order to diagnose and prompt therapeutic interventions abruptly. Computed tomography demonstrated that hilum of right lung was invaded by the metastatic mass. Echocardiography showed no mass in the ventricules. Fine needle aspiration biopsies were performed from the mass seen on computed tomography. These biopsies disclosed lung metastases of prostate adenocarcinoma. Therefore, he was diagnosed as castration-recurrent prostate cancer (CRPC). Docetaxel therapy launched. He had 10 cycles of docetaxel. Five months later he applied to hospital with difficulty in breathing, back pain. In physical examinations presence of mild pallor, bilateral few crepitations, musculoskeletal tenderness were found. The remains of physical examination were normal. Prostate specific antigen was 619 ng/mL, testesteron was <2,5 ng/mL. Radiologic findings showed progression. Therefore, the patient was consulate to radiation oncologist. After radiotherapy, abiraterone acetate were added to therapy. Abiraterone acetate therapy has been going on for 10 months.

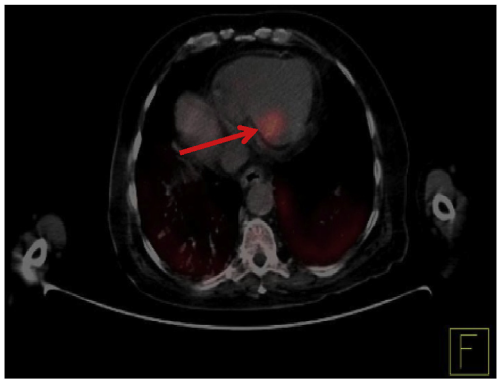

Fig. 1. Suspicious cardiac metastases of prostate adenocarcinoma.

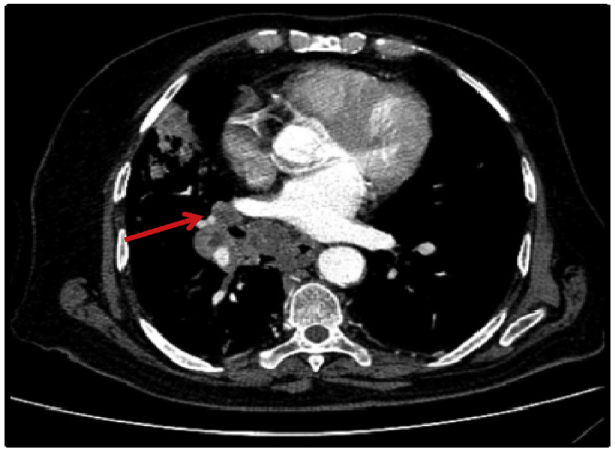

Fig. 2. Lung metastasis of prostat adenocarcinoma. Hilum of right lung was invaded by the metastatic mass. (arrow).

3. Discussion

The clinical symptoms of patients with cardiac metastasis varies and differs depending on the extent and the location with in heart. It could lead to an oncological emergency. Therefore, if the patients have severe clinical symptoms, a disseminated malign disease must be taken into account[2] and imaging techniques must be performed in order to prompt therapeutic interventions.

Positron emission tomography-computed tomography have been widely used for staging the disease, planing the treatment modalities and assessing the response.[7] Although it has many advantages, it could lead to false-positive or false-negative results. In a study performed by Osmonov et al., sensitivity and specificity of Positron emission tomography-computed tomography were demonstrated as 85.2% and 18.2%, respectively.[8] For instance, a sarcomatoid carcinoma of the lung underwent surgery mimicking aspergilloma on 18F-fluoro-2-deoxy-Dglucose-Positron emission tomography-computed tomography was reported by Zhang et al.[9] False-positive 18F-fluoro-2-deoxy-Dglucose- Positron emission tomography-computed tomography finding was reported in a patient with fat necrosis resected and revealed mimicking local recurrence of breast carcinoma.[10] Concerning cardiac metastasis, false-positive cardiac matastasis on 18F-fluoro-2-deoxy-Dglucose-Positron emission tomography-computed tomography was reperted by Pagé M et al.[11] In our case, we reported a false-positive 18F-fluoro-2-deoxy-Dglucose-Positron emission tomography-computed tomography finding (Fig. 1) via confirming by thorax computed tomography (Fig. 2), and echocardiography (Fig. 3). As explained above, the follow-up of patients has been going on.

We think that a patient with a history of malignancy and clinical cardiac symptoms must be evaluated carefully and cardiac metastasis must be taken into account in order to prompt therapeutic interventions.

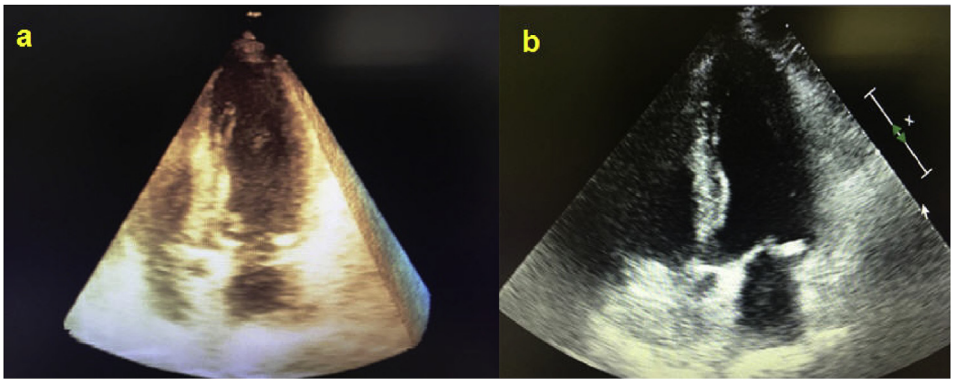

Fig. 3. 3D (Figure a) and 2D (Figure b) Transthoracic echocardiography showed that there was no metastatic mass and contractility deficit in the right and left ventricle.

Conflict of interest

The author(s) declared no potential conflict of interest.

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