

**Case Report***Copyright © All rights are reserved by Abbou-Ou-Cherif Yousra*

Asymptomatic Metastatic Osteosarcoma to The Right Atrium: Case Report and Review of The Literature

Abbou-Ou-Cherif Yousra*, Aboubakr Khaoula, Benbrahim Walid, Doghmi Nawal and Cherti Mohammed*Cardiology B department, IBN SINA University hospital center, Mohammed V University, Rabat, Morocco*

***Corresponding author:** Abbou-Ou-Cherif Yousra, Cardiology B department, IBN SINA University hospital center, Mohammed V University, Rabat, Morocco.

Received Date: March 13, 2023**Published Date: April 10, 2023****Abstract**

The heart may rarely be affected by primary or secondary tumors. Cardiac osteosarcoma metastasis is extremely rare and has been documented in young adults as shown in a number of case reports. IT may occur by local extension or haematogenous spread [1-2]. Only 5% of cases affect the endocardium or chamber cavities. We report a rare case of a 17-year-old children with asymptomatic cardiac osteosarcoma metastasis suspected by trans-thoracic echocardiography for pre-chemotherapy assessment and then confirmed by MRI.

Keywords: Cardiac Tumors; Osteosarcoma; Heart; Metastasis

Case Report

A 17-year-old children was diagnosed with right femur osteosarcoma. He had no cardiac symptoms. During his admission under oncology, routine trans-thoracic echocardiography for pre-chemotherapy assessment was performed and revealed a large and highly mobile mass (4.5×2.1 cm) in the right atrium which originated from the inferior vena cava, it also traversed the tricuspid valve and extended into the right ventricle (Figure A). Cardiac MRI with and without contrast was done It showed a large

mass in the Right atrium It was homogenous with multiple lobules and an internal and eccentric non-enhancing hypointense signal representative of an ossifying focus characteristic of osteosarcoma metastasis. There was also some evidence of contrast uptake on T1 weighted contrast images (Figure B). Spiral CT scan of the thorax showed a pulmonary nodule up to 5.5 mm at the basal segments of the right lung, which was suggestive of metastasis. The patient had a poor overall prognosis and he refused surgery, he is currently undergoing palliative chemotherapy.

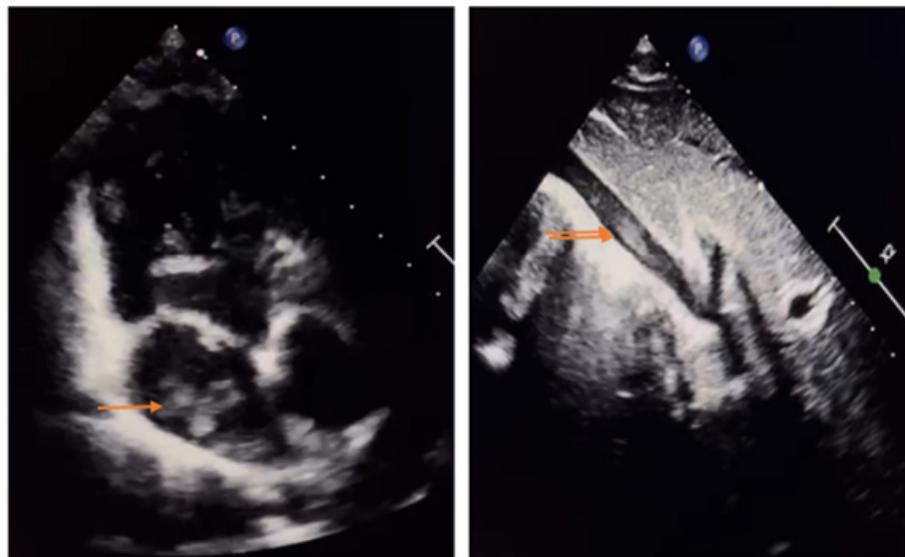


Figure A

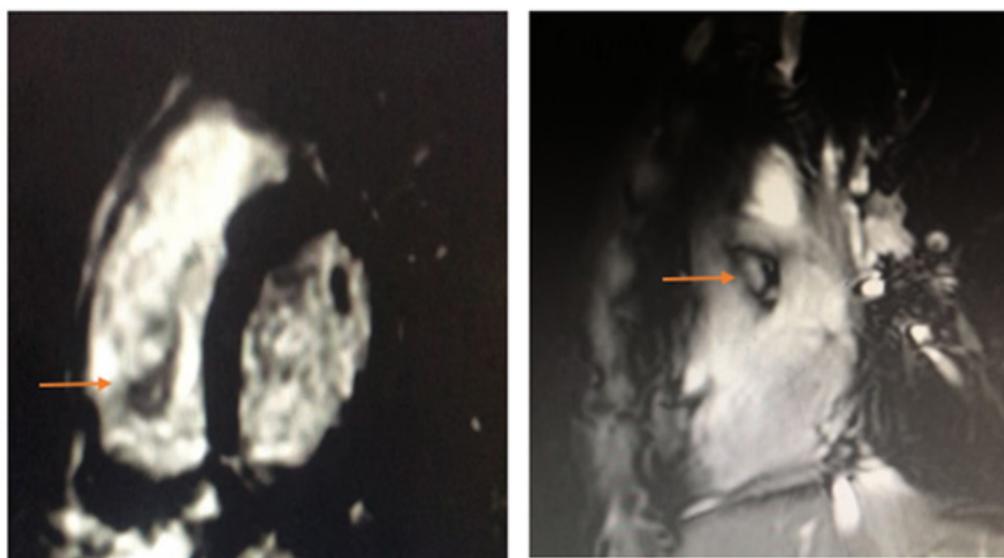


Figure B

Discussion

Osteosarcoma is the most frequent malignant bone tumor in young people [3], it preferentially affects the long bones, firstly the distal extremity of the femur followed by the tibia and the humerus [4-5]. Its incidence in children increases with age, peaking at puberty. It is a very aggressive tumor with a very early risk of metastasis during its evolution. The development of metastases is usually associated with a poor prognosis (5-year survival: 0%) [6]. Pulmonary metastasis is the most common and are found in 90% of cases in patients who died at autopsy [7]. The rest of the extrapulmonary metastasis preferentially affects the other bones.

Cardiac metastases are very rare, only a hundred case reports are found in the literature [8-9]. The primary cardiac osteosarcoma develops preferentially in the left atrium and metastatic sarcomas to the heart involve the myocardium more often than the pericardium whereas in our case it was a metastasis of the right atrium. The venous drainage pathway in this case, tracking from the upper extremity to the innominate vein emptying into the right atrium and ventricle, is a very unusual pathway for OS to metastasize. Patients are mostly asymptomatic but may present with palpitations, chest pain, dyspnea, infective endocarditis, superior vena cava syndrome or congestive heart failure according to the size of the

tumor and the location [10]. Magnetic resonance angiography, CTA, ventriculography, transthoracic echocardiography, and transesophageal echocardiography can be used for diagnosis [11].

In our case, the tumor was suspected by trans-thoracic echocardiography for pre-chemotherapy assessment and then confirmed by MRI. MRI is the gold standard for diagnosis. It is a valuable technique in evaluating masses located in the cardiac chambers and it is better than transthoracic echocardiography for detecting the presence, location and extent of tumours within the heart [12]. The diagnosis of cardiac tumors with endomyocardial biopsy has been rarely described. There are reports of failure to get enough tissues to diagnose tumor masses. Although surgery is generally contraindicated in the presence of metastatic disease, the role of surgical palliation of intracardiac tumor to relieve obstruction and to prevent embolization is nevertheless valid [13].

Conclusion

Metastatic cardiac osteosarcoma can be asymptotically diagnosed during the follow-up. Additionally, it can be the first symptom of recurrence [9-11]. The prognosis is generally poor but may be improved by early diagnosis and the addition of chemotherapy, radiotherapy and surgical resection. Therefore, patients with multiple osteosarcoma metastases should be screened for cardiac metastasis during a long follow-up phase.

Acknowledgement

None.

Conflict of Interest

No conflict of interest.

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