

Cardiac Metastasis of Uterine Leiomyosarcoma: Case Report and Literature Review

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Abstract

Uterine leiomyosarcoma is a very rare tumor. The risk of developing metastasis is high especially for lung. Some localizations are possible but infrequent. The heart is not a body filter and cardiac metastases are exceptional. We are reporting a case of a 57 years old female patient who had cardiac metastasis of an uterine leiomyosarcoma. Postmenopausal bleeding revealed the uterine tumor. The cardiac metastasis was discovered during an echocardiography indicated for pre-chemotherapy cardiac work-up. A magnetic resonance imaging revealed a mass connection between the mitral valve and the aortic sigmoid. The patient was placed on chemotherapy. Cardiac metastasis of a uterine leiomyosarcoma are very rare and have been rarely reported in the literature. The presence of cardiac metastasis in a patient need to be discussed inside a multidisciplinary committee before any symptoms.

Keywords: Cardiac-metastasis; Leiomyosarcoma; Postmenopausal bleeding

Introduction

Uterine leiomyosarcomas are rare tumors with a high risk for metastatic spread. Metastases are most often in the lung, brain, liver, and the bone [1]. The heart is not a filter unit, cardiac metastases whatever the origin and nature of the primitive are exceptional. We are reporting herein a rare case of cardiac metastasis of uterine leiomyosarcoma.

Patient and Observation

Extrahepatic This is the case of a 57 years old woman with no significant past medical history. The story of her illness began with spontaneous postmenopausal bleeding without other associated signs. The endo-vaginal ultrasound revealed a uterine tumor. Endometrial curettage and hysterectomy without adnexal conservation with histopathological study allowed the diagnosis of uterine leiomyosarcoma grade 2 per "La Federation Nationale des Centres de Lutte Contre le Cancer (FNCLCC)". The tumor was classified per World Health Organization (WHO) 2012 PT1 (Figures 1 and 2).

To verify the diagnosis for uterine leiomyosarcoma, we have completed with immunohistochemical study which showed the presence of anti-smooth muscle actin (SMA) antibodies (Figure 3), and anti-desmin antibodies (Figure 4).

Post-operative staging reveals the presence of several lung metastatic

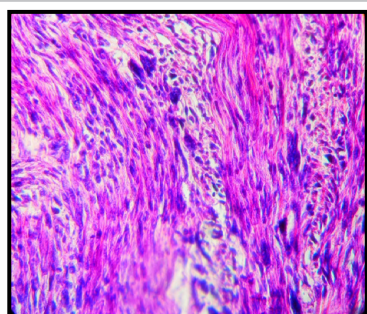


Figure 1: Fusocellular mesenchymal proliferation arranged in long and intersecting bundles (Optical microscope (OM), Hematoxylin eosin, Magnification (M) x 10).

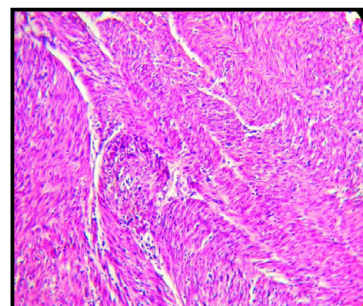


Figure 2: These fusiform tumor cells are provided with a severe anisocaryote nucleus of mitotic figures (OM, HE, Mx40).

nodules. The decision of the multi-disciplinary meeting was to initiate a first-line metastatic chemotherapy.

As part of pre-chemotherapy examinations before the use of anthracycline, a trans-thoracic echocardiography objectified a mass at the non-coronary cusp. Trans-esophageal ultrasound revealed an echogenic mass floating between the mitral valve and the aortic valve into the left ventricle of 12 × 20 mm. There was no impact on the heart function. Examinations looking for infective endocarditis was negative. Ultrasound was complemented by imaging cardiac magnetic resonance (MRI) (Figures 5a-5c).

MRI revealed a tumor mass of 27 × 26 × 20 mm. This mass was mobile and was located at the junction of the mitral valve and aortic sigmoid. It was enhanced after contrast injection. The biopsy was

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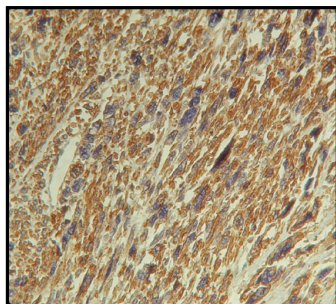


Figure 3: Diffuse expression with high intensity of smooth muscle actin antibody (SMA) by these tumor cells (OM, Mx40).

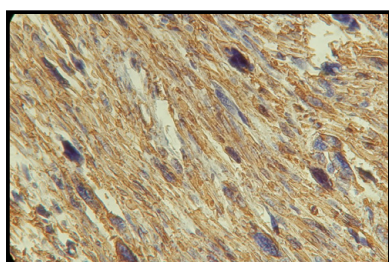


Figure 4: Expression with moderate intensity of the Anti-desmin antibody by neoplastic cells (OM, Mx20).

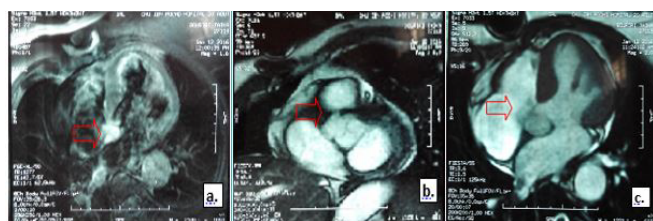


Figure 5: Cardiac magnetic resonance imaging (MRI): (a): T2 weighted sequence, (b): T1 contrast sequence, (c): T1 weighted sequence, Showing a movable tissue mass located at the junction of mitral valve and aortic semilunar intensely enhanced after injection of the contrast medium, measuring 27 × 26 × 20 mm for a secondary location.

not done. The patient was placed on a mono-chemotherapy with Adriamycin.

Discussion

Preclinical Uterine's leiomyosarcoma cardiac metastases are rarely observed. Their incidence is increasing due to the accessibility of para-clinical examination. Examinations as trans esophageal echocardiography and cardiac MRI allows the diagnosis of metastasis [2,3]. Rosenblatt and Featherston published the first case in 1960 since only a few cases have been reported [4].

The mechanism of these metastases is not understood. Three

hypothesis are possible, through the coronary arteries by blood flow, by contiguity and retrogradely by lymphatic circulation [4].

A simple dyspnea can manifest the cardiac metastasis, anger, pulmonary embolism or cardiac tamponade [5]. Asymptomatic form is difficult to diagnose. The circumstances of discovery are usually accidental [5]. The patient in this observation was asymptomatic.

The locations of metastases in order of frequency are: the pericardium, myocardium, epicardium, endocardium, and the inter-ventricular septum. The patient had a metastasis in the junction of mitral valve and aortic sigmoid and this location is extremely rare [3,6].

The echocardiography and MRI are important diagnostic tools. They have several functions, guide the biopsy, and assess resectability of the tumor. For multi-metastatic disease, the biopsy cannot be done as the patient of this observation [7].

Cardiac metastases are treated with surgery if resectable and if there is no metastatic in other location. The patient was not a candidate for surgery [7].

Conclusion

Although the cardiac metastases remain an extremely rare entity, any clinician should be aware of its existence, and must know the usefulness of the echocardiography for diagnosis and optimal management.

Authors' Contributions

All the authors contribute in this study.

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