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 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

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).

Figure 3: Neoplastic cells surrounded by a narrow hypo-chromic halo, with blastema-like cytoplasm and large and intersecting, nucleus of mitotic figures (OM, HE, Mx40).

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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 interventricular 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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