



Leiomyoma Invasive to Cardiac Cavities. Case Report and Literature Review

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Abstract

We present the case of unusual intracardiac growth of intravascular leiomyomatosis in a 43-year-old woman, who underwent hysterectomy due to large element uterine myomatosis plus right oophorectomy for a probable tumor with a current history of dyspnea, accompanied by palpitations, fatigue, dizziness, it improves with rest. In the imaging approach, a thoracoabdominal Angio tomography was performed, evidencing thrombosis at the level of the superior vena cava and right atrium, transthoracic echocardiography showed a mass in the right cavity. Given its unusual presentation and the difficulties in the diagnostic and therapeutic approach, a subsequent review of the literature is carried out.

Keywords: Leiomyomas; Cardiac Cavities; IVL (Intravascular Leiomyomatosis)

Introduction

Leiomyomas are the most common neoplasms of the female genital tract and usually appear in up to 40% of women of child-bearing age [1]. Rarely, these tumors have an unusual intracardiac growth pattern and can be life-threatening. They occur in women with a history of uterine tumors and their symptoms may be asymptomatic. or symptomatic presenting syncope, acute heart failure, palpitations and sudden death. It is characterized by the benign histological growth of smooth muscle cells within the uterine veins and its intravascular location and intracardiac extension are infrequent. It is a rare condition about which information has been obtained due to the report of isolated cases around the world, reporting the first case of pelvic origin with intravascular extension to cardiac cavities was described in 1907 in Germany, other cases reported in Chile, Mexico, its incidence in the United States it is approximately 30% in women over 30 years of age and 80% in women over 50 years of age [2].

It has aggressive behavior, since it has high rates of recurrence, however, it has a good response to surgical treatment and can

have fatal consequences, due to vascular invasion that can spread through the iliac veins and the inferior vena cava, even invading right cardiac cavities, causing obstruction. blood flow, severely altering valve dynamics, favoring the development of pulmonary embolism, which is why it is considered fatal [3].

Case

A 43-year-old female patient with no known pathological history, only large uterine myomatosis, for which, in October 2020, a hysterectomy plus right oophorectomy was performed due to a probable ovarian tumor, and did not continue follow-up. With current condition of presenting dyspnea 1 month ago when walking at least 5 meters, accompanied by palpitations, fatigue, dizziness, which improves with rest.

In the imaging approach, thoracoabdominal Angio tomography was performed, evidencing thrombosis at the level of the superior vena cava and right atrium (Figure 1). Transthoracic echocardiography showed a mass in the right cavity of approximately 4.4 x 1.9 cm (Figure 2).

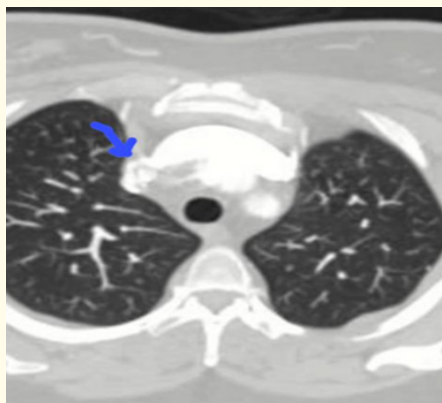


Figure 1: Thoracic CT angiography shows a filling defect corresponding to a thrombosis at the superior cava and right atrium level at the entrance of the superior cava.

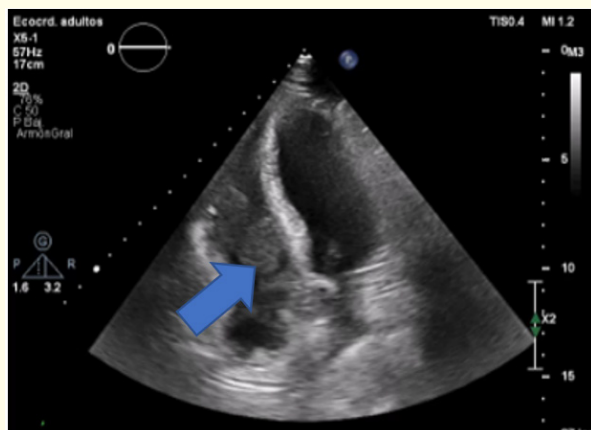


Figure 2: Transthoracic echocardiogram showing a mass in the right atrium. 4.4x1.9 cm at the level of the tricuspid ring oscillates between the RA / and the RV obstructing the tricuspid valve. (arrow).

A medical-surgical session was carried out where it was decided to treat the patient with a surgical resection. During surgery, the atriotomy of the right atrium revealed a solid bilobed tumor of approximately 6x4 cm coming from the inferior vena cava up to 5 cm below the mouth of the inferior vena cava without compromise of the tricuspid valve. and disinsertion of the tumor from the wall of the inferior vena cava up to 5 cm below the mouth without achieving complete extraction at the level of the abdominal cava, a piece is removed (Figure 3).



Figure 3: Macroscopic image: Irregularly ovoid specimen, the largest dimension measures 3.0 cm x 2.5 cm x 2.2 cm, the smallest dimension measures 1.5 cm x 1.3 cm x 1.0 cm. They are solid with a homogeneous grayish-white appearance with yellowish areas. A tumor is observed in the area corresponding to the tricuspid valve (arrow).

Discussion

Intravenous leiomyoma, is a benign smooth muscle neoplasm, it is the result of the extension of the myometrium itself. The tumor is confined to the pelvic area, and can progress after several years towards the inferior vena cava and finally towards the right atrium as in this case [4]. Symptoms may be absent until embolism or sudden death appears. Sometimes this pathology can be underdiagnosed, as in the case of our patient, it was initially considered to be a thrombus or a primary cardiac tumor; however, a tumor was obtained during surgery, which was examined histologically and categorized as a leiomyoma [5]. The approach that could promote this type of pathology in the history of the disease has been studied, being the partial approach of hysterectomy and oophorectomy in premenopausal patients, resulting in few registered cases of de novo growth associated with stimulation promoting rapid growth in nearby anatomical areas such as the intercave and finally with atrial involvement. Regarding its management, it is treated in two approaches, a surgery to remove the cardiac tumor, with a subsequent caval approach. Surgery is mandatory in this type of pathology, to avoid recurrences [6,7].

Imaging studies are essential to make the diagnosis, plan surgery, and detect recurrence in patients with IVL (intravascular leiomyomatosis). Echocardiography is the most useful study to assess the intracardiac extension of IVF. Transesophageal echocardiography is frequently used to show details of the inferior vena

cava, involvement of the tricuspid valve apparatus, and possible tumor adhesions [3]. Contrast-enhanced computed tomography and magnetic resonance imaging are generally used to delineate involvement and confirm the extent of tumor lesion within the vessels and cardiac chambers [3,4].

Conclusion

It is an unusual condition that can occur in premenopausal women. Two theories are known: the intravenous type, this can arise from the wall of the veins within the myometrium or be the result of an unusual extensive vascular invasion from uterine leiomyoma. Cardiac compromise is slowly growing, therefore cardiovascular symptoms are not expected until they extend to the intracardiac level, where symptoms associated with right ventricular outflow obstruction usually occur, such as dyspnea, tachycardia, dizziness, as in the case of our patient who underwent thoracoabdominal Angio tomography imaging approach, evidencing thrombosis at the level of the superior vena cava and right atrium, trans-thoracic echocardiogram shows a mass in the right cavity for this reason she underwent surgery consisting of complete resection of uterine leiomyoma to avoid recurrence and risk of mortality, it is vital to know about this condition given its unusual presentation and the difficulties in the diagnostic and therapeutic approach.

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