Case Report

Hemangioma in the Right Atrium: A Rare Case With Sinus Bradycardia and Syncope

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ABSTRACT

Cardiac hemangiomas are quite rare. They present with vascular lesions that are usually benign and detectable by echocardiography, computerized tomography scan, and cardiac magnetic resonance imaging. We present a rare case of hemangioma in the right atrium. A 48-year-old woman presented to the emergency department with sinus bradycardia and syncope. After workup, the final diagnosis was cardiac mass. According to pathology findings, hemangioma was diagnosed. ***(Iranian Heart Journal 2022; 23(4): 120-124)***

KEYWORDS: Diagnosis, Cardiac mass, Electrocardiogram

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Received: May 5, 2021 **Accepted:** July 19, 2021

Hemangiomas are benign cardiac tumors presumed to be hamartomas or real neoplasms. Their usual primary source is the skin, but they can arise from any other internal organ, such as the heart.[1,2] Hemangiomas can originate from all the cardiac chambers. Transthoracic echocardiography (TTE) is the most conventional modality to diagnose cardiac tumors, including hemangiomas.[3] Hemangiomas are often asymptomatic. The symptoms of these tumors result from changes in the size and mobilization of these tumors; thus, they become a source of arrhythmias, pericardial effusion, heart failure, and compression on the epicardial coronary arteries.[4,5]

Case Report

A 48-year-old woman with no past medical history was referred to the cardiac emergency department with an episode of syncope. Electrocardiography showed sinus bradycardia of approximately 40 beats per minute. Paraclinical data, such as the blood cell count, the erythrocyte sedimentation rate, creatinine, blood electrolytes, and other routine laboratory data, were normal. TTE revealed left and right atrial enlargement and a large, fixed mass on the interatrial septum with a compression effect on the caval veins and tricuspid valve (Fig. 1). Precise definition of the atrial cavity from which the tumor originated was not possible by echocardiography. In coronary angiography, the coronary arteries were normal, and the

large left circumflex artery supplied a mass with prominent tumor blush (Fig. 2). Cardiac surgery was performed. There was a large mass in the right atrium with adhesion to the interatrial septum and the coronary sinus orifice. The tumor was resected, and regarding the large defect in the interatrial septum, a patch of pericardium was inserted on the interatrial septal defect. The pathology report revealed a hemangioma characterized by trace smooth muscle elements and vascular channels, including thick-walled arteries and veins with no evidence of mitotic figures, necrosis, and atypia (Fig. 3). The patient was discharged from the hospital, and there were no complaints and symptoms at her follow-up after 6 months.

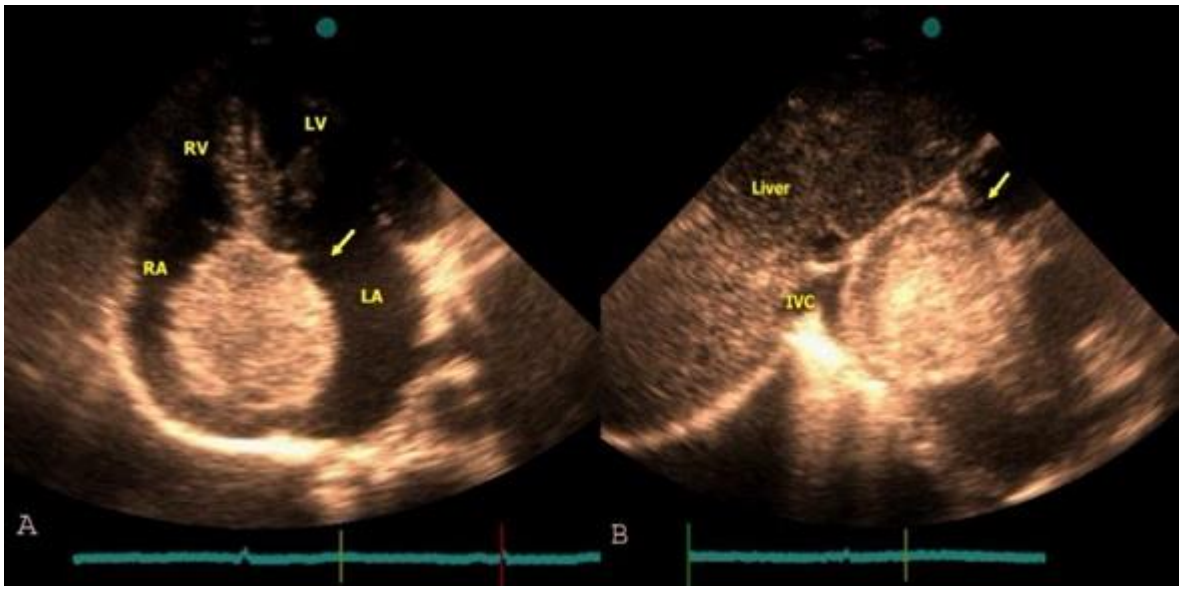

Figure 1: Transthoracic echocardiography (A: the apical 4-chamber view and B: the subcostal view) shows a large fixed mass on the interatrial septum (A: the arrow) and the compression effect on the caval veins and the tricuspid valve (B: the arrow).

RV, Right Ventricle; LV, Left ventricle; RA, Right atrium; LA, Left atrium; IVC, Inferior vena cava

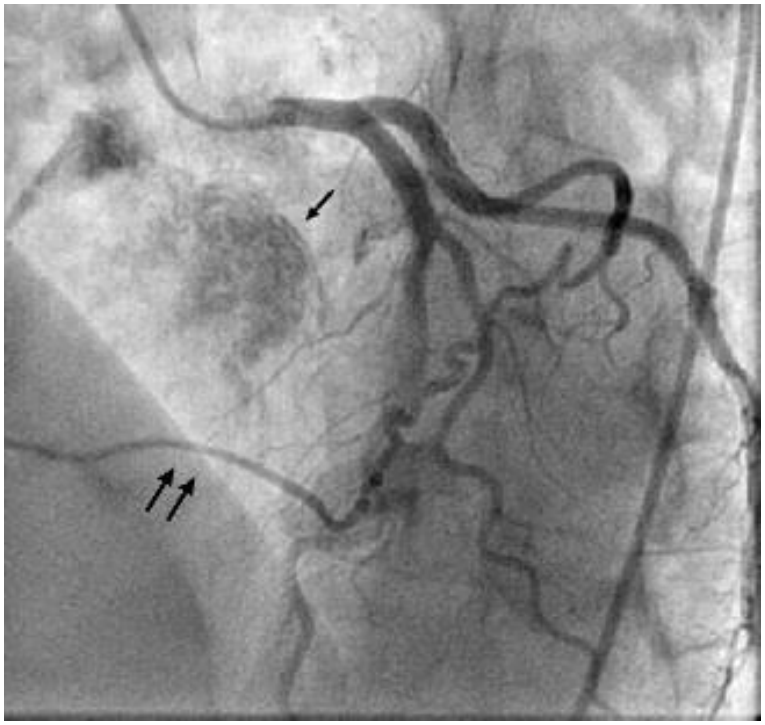

Figure 2: The coronary angiogram (LAO- the cranial view) shows the left circumflex artery, which supplies a mass (the double arrows) with prominent tumor blush (arrow).

LAO, Left anterior oblique

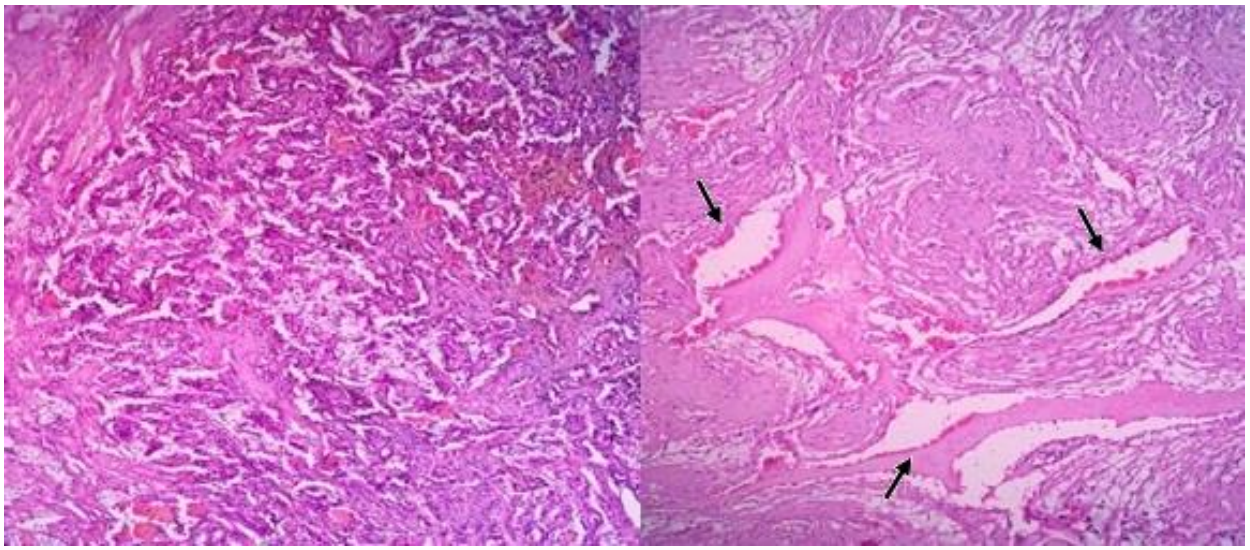

Figure 3: The photo micrographs of the cardiac mass (magnification; the right slide: 40X and the left slide: 100X) show a hemangioma with trace smooth muscle elements and vascular channels, including thick-walled arteries and veins (the arrows) with no necrosis or atypia.

DISCUSSION

Only 2% to 3% of all benign tumors of the heart are hemangiomas.[6] The most common location of this type of tumor is the subendocardium, where the tumor may be generally solitary.[7] The origin of hemangiomas is uncertain, but they seem to

be neoplasms or hamartomas.[8] Cardiac catheterization can be used to diagnose hemangioma by filling defects in the cardiac cavity. Coronary angiography may prove our diagnosis by vascular blush, particularly in the capillary and arteriovenous types of tumors. Symptomatic patients most commonly present with exertional dyspnea; nevertheless, other serious symptoms, such as arrhythmia, angina, pericardial effusion, and even heart failure, are not unusual.[9] Echocardiography is usually the initial imaging modality for detecting cardiac tumors since it has a high accuracy rate, whereas cardiac computed tomography (CT) scan and cardiac magnetic resonance (CMR) imaging have perfect accuracy rates in these cases. CT and CMR have been used to evaluate myocardial involvement. These modalities can be drawn upon to diagnose the extra-cardiac invasion of the hemangioma.[10,11] There is no agreement regarding the management of cardiac hemangiomas, but conservative management is recommended for asymptomatic hemangiomas in some articles because spontaneous regression has been reported.[12] The natural behavior of a cardiac hemangioma is not predictable. It can either stop growing and regress or proliferate over time; nonetheless, surgical resection is the main treatment for hemangiomas, particularly when a compression effect on the major cardiac structures is present.[13]

CONCLUSIONS

Cardiac hemangiomas are rare and often asymptomatic. Imaging can play a significant role in tumor diagnosis and provide information about the location, size, and extracardiac involvement of the tumor. Because of the compression of the cardiac structures and life-threatening symptoms, the resection of the hemangioma is preferred, and regular monitoring is recommended due to tumor recurrence after excision.

Conflict of Interest

We declare no conflicts of interest.

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