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Noncomplicated Excision of a Mobile Pedunculated Septal Hemangioma of the Left Ventricle

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Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
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Conflict of interest: None declared

Patient: Female, 27
Final Diagnosis: LV hemangioma
Symptoms: Palpitation • dyspnea • fatigue
Medication: —
Clinical Procedure: Posterior atriotomy
Specialty: Cardiology

Objective: Rare disease

Background: Cardiac tumors are quite rare, and differential diagnosis of them is challenging.

Case Report: A young lady with a history of palpitations, dyspnea, and fatigue was proven by transthoracic echocardiography and cardiac magnetic resonance imaging to have a mobile left ventricular mass with rounded contour attached to the mid-part of the interventricular septum. The mass was approached via a posterior inter-atrial approach to avoid left ventriculotomy and provide adequate exposure to completely excise the tumor and control its pedicle with minimal cardiac trauma. Histological examination of the mass was diagnostic of capillary and sinusoidal hemangioma.

Conclusions: Complete excision of cardiac hemangioma is recommended once it is diagnosed, for histopathologic diagnosis and because of the possibility of serious complications.

MeSH Keywords: Echocardiography, Doppler • Heart Neoplasms • Heart Ventricles

Full-text PDF: <http://www.amjcaserep.com/abstract/index/idArt/897272>



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Background

Cardiac tumors represent a rare disease category with a challenging differential diagnosis. This report describes a rare finding of cardiac hemangioma, its specific morphological characteristics, criteria that indicate a high risk of embolization, and successful noncomplicated surgical excision.

Case Report

A female patient aged 27 years was complaining of dyspnea and palpitations. Physical examination was unremarkable. Chest X-ray showed no abnormalities, and electrocardiogram (ECG) showed normal sinus rhythm. Blood chemistry and other laboratory tests revealed normal results. Transthoracic echocardiography (TTE) showed a mobile 1.3×1.7 cm left ventricular (LV) mass with rounded contour and smooth surface attached to the mid-part of the interventricular septum (Figure 1). Cardiac magnetic resonance imaging (MRI) showed a small, pedunculated, rounded mobile mass attached to the left side of the interventricular septum with iso-intense signal in steady-state free precession (SSFP), T1-weighted, and T2-weighted images (Figure 2). The mass also had subtle enhancement at its insertion point without significant enhancement of the remaining part.

Total excision of the mass was planned because of the patient's symptoms, the perceived risk of systemic embolization, and the need for tissue diagnosis. Mass extraction was done via posterior inter-atrial approach to avoid left ventriculotomy (in order to prevent postoperative LV dysfunction and arrhythmias). Also, this conventional left atriotomy approach

provided adequate exposure to completely excise the mass and control its pedicle with minimal cardiac trauma. The mass appeared pinkish, fragile, and multilobular with an appreciable stalk. Total excision of the mass was done, and its pedicle was thoroughly cauterized (Figure 3). Recovery was uneventful.

TTE prior to discharge showed no residual masses and normal LV dimensions and function. Histopathologic examination showed proliferated capillary-size vascular channels in a lobular pattern with plump endothelial lining, together with irregularly dilated and congested thin-walled gaped blood vessels giving a sinusoidal appearance, lined by attenuated endothelial cells with hemorrhages in myxoid and fibrotic stroma; this picture is diagnostic of capillary and sinusoidal hemangioma (Figure 4).

Discussion

Hemangiomas are benign tumors originating from the endothelial cells to form blood channels. Cardiac hemangiomas comprise approximately 2.8% of benign cardiac tumors and have an equal age distribution and a female preponderance [1,2]. Grossly, they can be either polypoid or sessile. Histologically, they are nonencapsulated tumors [2].

Hemangiomas of the heart can be found within the pericardium, myocardium, or endocardium and can originate from any cardiac chamber (and interventricular septum) but very rarely from the mitral valve. Hemangiomas of the heart exhibit variable courses; they may enlarge, remain stationary, or undergo involution [3,4]. Hemangiomas are mainly asymptomatic, but can sometimes have various presentations including valvular obstruction, heart failure (due to obstruction), atypical

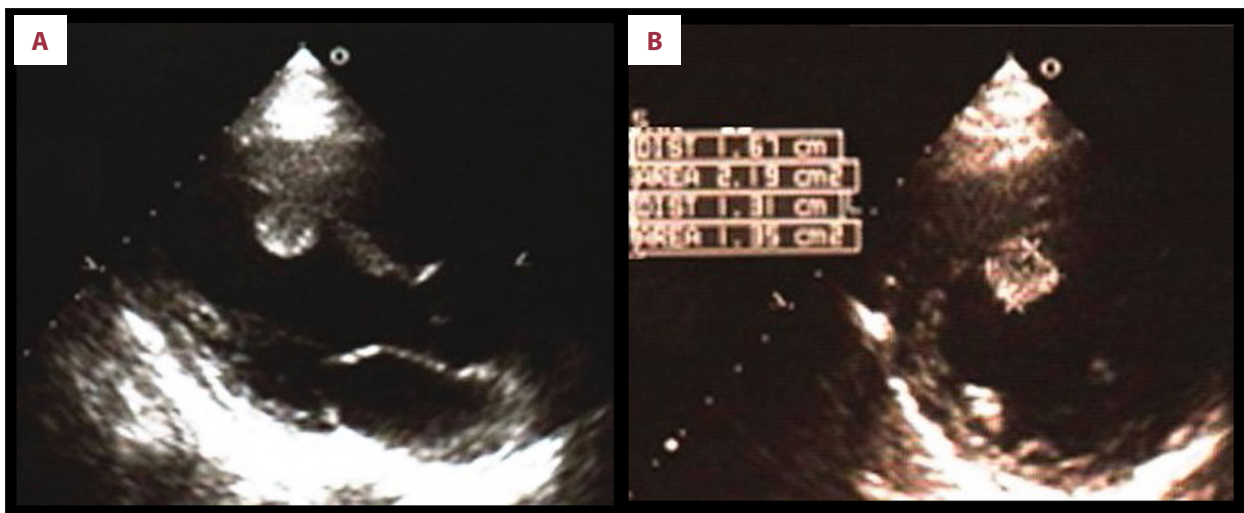


Figure 1. Preoperative trans-thoracic echocardiogram images in both parasternal long (A) and short (B) axis views showing a mobile 1.3×1.7 cm left ventricular mass with rounded contour and smooth surface attached to the mid-part of the interventricular septum

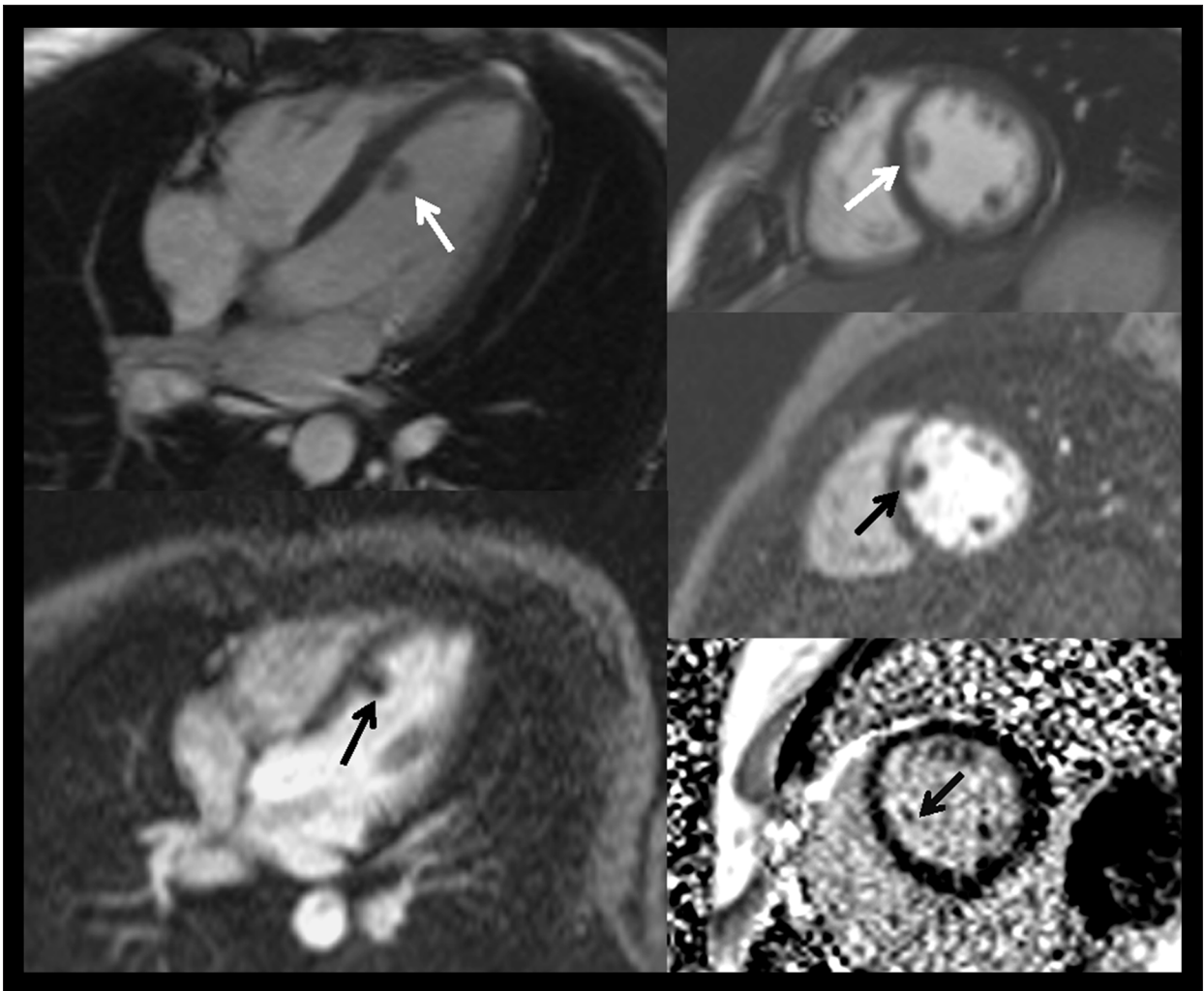


Figure 2. T1- and T2-weighted cardiac magnetic resonance imaging photos showing the small, pedunculated, rounded mobile mass attached to the left side of the interventricular septum in multiple views (arrows).

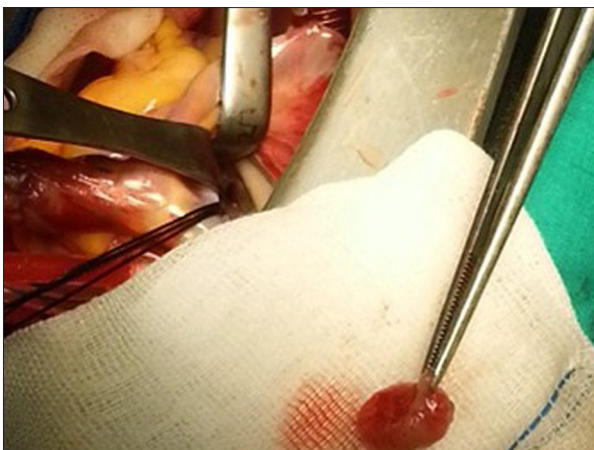


Figure 3. Intra-operative gross appearance of the extracted left ventricular mass after total excision.

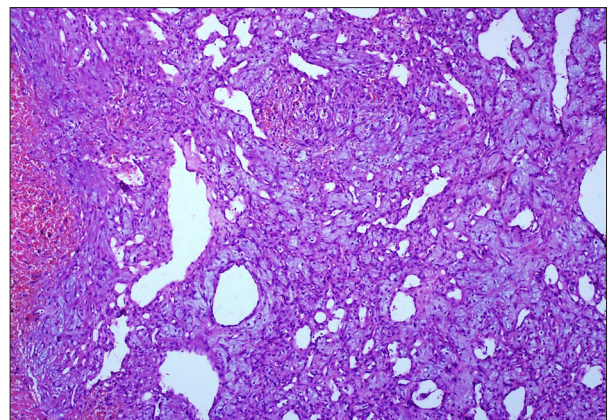


Figure 4. Histopathologic examination of the mass showing proliferated capillary-size vascular channels in a lobular pattern with irregularly dilated and congested thin-walled gaped blood vessels; this picture is diagnostic of capillary and sinusoidal hemangioma.

chest pain, pericardial effusion, systemic embolism, Kasabach-Merritt syndrome [5], and even sudden death consequent to arrhythmia and conduction disturbances or rupture and tamponade [6–8].

ECG is usually normal, and diagnosis is typically made with TTE; the tumor can be characterized more fully with transesophageal echocardiography if necessary [9,10]. Coronary angiography, ventriculography, computed tomography (CT), and MRI can sometimes provide additional information [4,11,12]. Coronary angiography can occasionally diagnose hemangioma by its characteristic vascular blush. Initial contrast CT scanning can show a filling defect in the affected chamber, but follow-up imaging after 5 minutes usually shows the tumor enhancing with Hounsfield units equivalent to that of the surrounding blood in the heart, suggesting the highly vascular nature of the tumor. For preoperative planning, MRI can give additional information regarding the soft tissue around the tumor [13]. Axial T2-weighted MRI shows a high signal mass owing to vascularity [14].

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Conclusions

Once mobile and pediculated LV hemangioma is suspected, a left atriotomy approach can be recommended as a safe technique for its complete excision. This approach is needed to avoid serious complications, such as systemic embolization, and to enable histopathological diagnosis.

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Conflicts of interest

No potential conflicts of interest exist.