

Intramural Hemangioma of the Left Ventricle:

Accurate Noninvasive Diagnosis and Surgical Treatment

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A 38-year-old man was admitted to the hospital because of bronchitis and self-limited hemoptysis. He was heterozygous for factor V Leiden and had hyperhomocysteinemia. A thoracic computed tomographic (CT) scan, to screen for pulmonary emboli, instead revealed a 20-mm-diameter mass in the left ventricular myocardium. A CT angiogram showed that the mass was fed by a marginal branch of the left circumflex coronary artery and had no well-defined capsule (Fig. 1). A coronary angiogram showed a marginal branch that ended in a rounded stain or “tumor blush,” a typical sign of benign vascular tumors (Fig. 2). On cardiac

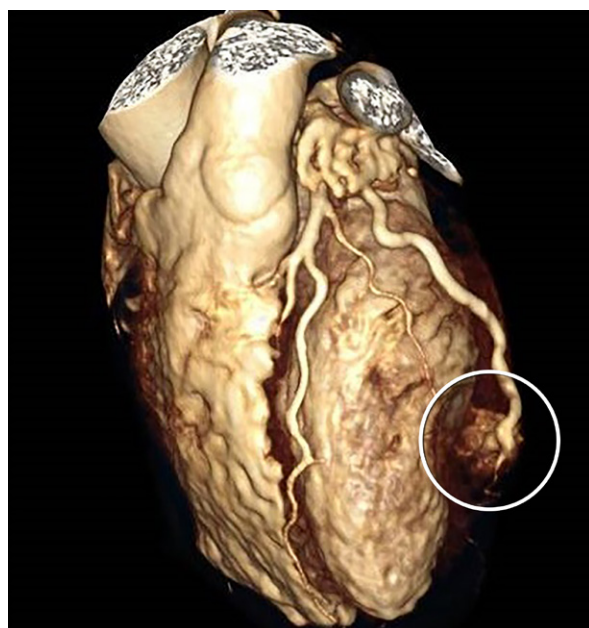


Fig. 1 Computed tomographic coronary angiogram (3-dimensional reconstruction) shows that a marginal branch of the left circumflex coronary artery ends in the tumor (encircled), which is in the inferolateral wall of the left ventricle.

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Fig. 2 Coronary angiogram shows tumor blush (arrow).

magnetic resonance images, the T2-weighted signal was hyperintense (Fig. 3A), whereas the T1-weighted signal was isointense (Fig. 3B). When gadolinium contrast medium was administered, rapid enhancement during first-pass infusion and late homogeneous enhancement of the lesion indicated its vascular nature (Fig. 3C).

We concluded that the patient had a benign intramural hemangioma of the left ventricle, with no apparent complications. After a risk–benefit analysis, we surgically exposed the tumor (Fig. 4), carefully resected it, ligated its small nutritional vessels, and closed the defect

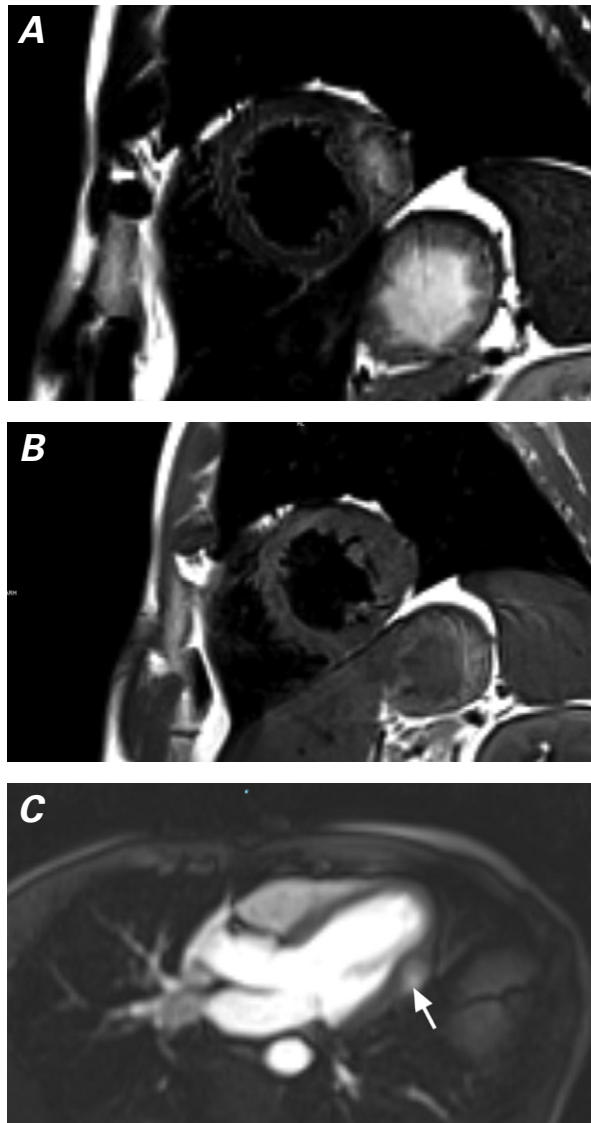


Fig. 3 Cardiac magnetic resonance images. **A)** The T2-weighted fast-spin echo sequence shows that the tumor has higher signal intensity than does the myocardium. **B)** The T1-weighted fast-spin echo sequence shows an isointense signal in comparison with the surrounding myocardium. **C)** During the first-pass infusion of gadolinium contrast medium, the tumor (arrow) enhances rapidly.

[Supplemental motion image is available for Figure 3C.](#)

with use of interrupted sutures. The patient recovered uneventfully.

Macroscopic examination revealed a solid mass that had a smooth, bright, whitish surface of fibrous appearance and areas of muscle (Fig. 5A). Microscopic sections revealed a benign tumor with irregular capillary vascular structures and some cavernous patterns (Fig.

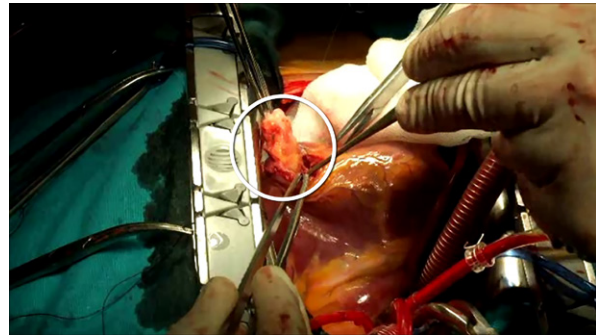


Fig. 4 Intraoperative photograph shows the exposed mass upon its removal.

[Supplemental motion image is available for Figure 4.](#)

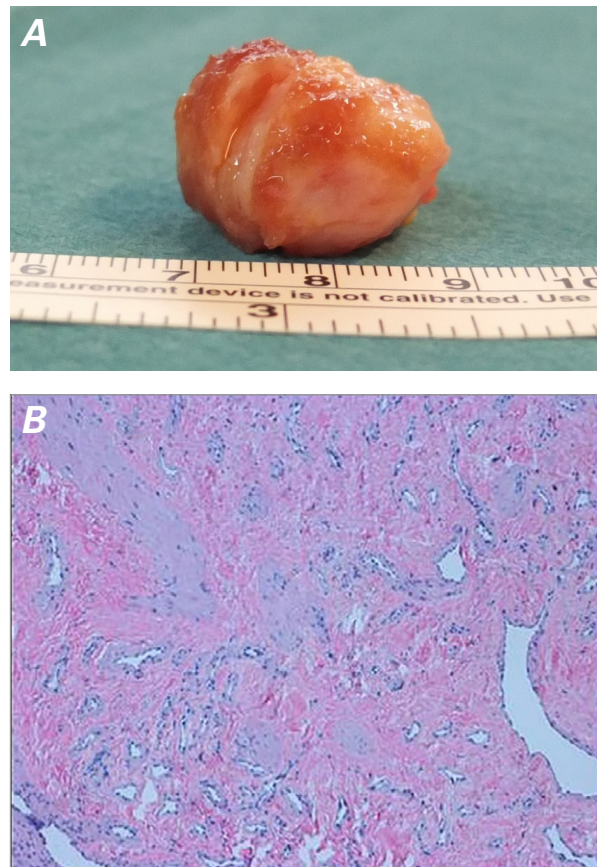


Fig. 5 A) Photograph shows a solid, fibrous tumor with surrounding cardiac muscle. **B)** Photomicrograph shows irregular capillary and cavernous patterns, lined endothelium, and a collagenous matrix (H & E, orig. $\times 100$).

5B). There was no atypical proliferation of endothelial cells. Compressed myocardial fibers were found in the tumor's periphery. Immunohistochemical analysis confirmed the vascular nature of the cells. The final diagnosis was benign myocardial hemangioma.

Comment

Cardiac hemangiomas can cause life-threatening complications.^{1,2} Imaging techniques help in the differential diagnosis of cardiac tumors, frequently enabling risky biopsies to be avoided. Surgical removal of the tumor is mandatory when patients present with ominous symptoms or a large mass; conversely, there is disagreement about the management of small hemangiomas without structural involvement in asymptomatic patients.³

We decided to remove this tumor for several reasons: the patient's likely need for anticoagulation because of an increased risk of thrombosis; the risk of the tumor's bleeding; and the need to make the differential diagnosis with low-grade angiosarcoma.

References

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