A mass in the right atria was detected by computed tomography (CT) 2 years ago in a 61-year-old man with a medical history of hypertension and surgery for gall bladder carcinoma. The latest CT imaging indicated enlargement of the mass. Transthoracic echocardiography showed that a mobile mass in contact with the septum was present in the right atrium, and a very bright region suggesting partial calcification was noted (Figure 1A and online-only Data Supplement). On nongated chest contrast CT, a low-intensity 26×20-mm region without enhancement and with partial calcification was present in the right atrium (Figure 1B and online-only Data Supplement); noncontrast MRI of the chest showed a round lesion with a diameter of approximately 26 mm and a clear boundary in contact with the septum. The inner region of the mass showed a slight high intensity on T₁-weighted imaging (Figure 2A and online-only Data Supplement) and a low intensity on T₂-weighted imaging (Figure 2B and online-only Data Supplement). The MRI signal intensity of this case is very similar to thrombus or hematoma. On inferior venacavography, a 30×15-mm mobile mass with a smooth surface was noted in the right atria near the orifice of the inferior vena cava (Figure 3). No feeding artery was found by coronary arterial catheterization, but 90% stenosis was present in the posterior descending branch of the right coronary artery and in the left anterior descending branch. Because the form of the mass and the MRI signal intensity was atypical and inconsistent with myxoma or lipoma, thrombosis or hematoma were strongly suspected. The patient was asymptomatic, but coronary bypass and mass excision were performed because of the enlargement of the mass and the significant stenoses in the 2 coronary arterial branches. His postoperative recovery was smooth, without major complications, and he was discharged 10 days after surgery. The histopathological diagnosis was varix. The inner region of the excised varix was filled with dark blackish blood. Partial fibrous hypertrophy was noted in the tunica intima of the varix. The calcified region contained platelets and showed phlebolith features of an organized thrombus (Figure 4).

Varix in the heart is rare. The reported incidence of cardiac varix ranges from 0.07% to 2.5%. This condition is often incorrectly diagnosed as a cardiac tumor, particularly as myxoma. Even a combination of echocardiography, CT, and MRI may not lead to the diagnosis of varix, and thus the patient may be treated for a cardiac tumor. We will point out some characteristics of varix in the heart, based on this case. Cardiac varix is often associated with calcified phlebolith, whereas calcification of myxoma is generally infrequent. Because the signal intensity characteristics of thrombus vary

From the Second Department of Surgery, Faculty of Medicine, University of Yamanashi, Yamanashi, Japan.

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Correspondence to Yuki Okamoto, MD, Second Department of Surgery, Faculty of Medicine, University of Yamanashi, 1110 Shimokato, Chuo City, Yamanashi, 409-3821 Japan. E-mail yamanashimedical@yahoo.co.jp

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on MRI depending on the age of the thrombus, it can be difficult to distinguish varix from thrombus on the basis of MRI. However, MR signals differ between cardiac varix and cardiac tumor and may be useful for differential diagnosis. Myxoma is hypointense relative to the myocardium on T<sub>1</sub>-weighted images and has high-signal intensity on T<sub>2</sub>-weighted images, and lipomas have MRI characteristics of homogeneous high-signal intensity on T<sub>1</sub>-weighted images and slightly less high-signal intensity on T<sub>2</sub>-weighted images.<sup>3,4</sup> In summary, the common characteristics of cardiac varix include the following: development close to the posteroinferior margin of the fossa ovalis as a round mass with a smooth surface and thrombus-like phlebolith features without enhancement on CT; and MRI and an inner region in many cases that shows a slight high intensity on T<sub>1</sub>-weighted MRI and a low intensity on T<sub>2</sub>-weighted MRI. We suggest that a diagnosis of varix should be considered on the basis of the characteristic CT and MRI findings, such as those observed in this case.

**Disclosures**

None.

**References**


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**Figure 2.** Noncontrast MRI. T<sub>1</sub>-weighted imaging (A) shows a mass with a smooth surface, with an inner region of slightly high intensity (arrow) and T<sub>2</sub>-weighted (B) imaging shows a round mass with an inner region of low intensity (arrow) attached to the atrial septum.

**Figure 3.** Inferior venacavography shows a mobile mass with a smooth surface near the orifice of the inferior vena cava (arrow).
Figure 4. A. The macroscopic specimen appears as a soft, smooth mass filled with dark blackish blood and including a phlebolith (arrowhead). B. Postoperative picture of the opened varix demonstrates a yellowish-white phlebolith (arrow).
Varix of the Heart
Yuki Okamoto, Masahiko Matsumoto and Hidenori Inoue

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