

**The Use of 2 Contrast Filling Patterns in the Diagnosis of a Giant Coronary Aneurysm**  
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## The Use of 2 Contrast Filling Patterns in the Diagnosis of a Giant Coronary Aneurysm

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A 75-year-old woman was admitted for exertional dyspnea and chest pain that had been present for several months. She denied any past history of medical illness such as hypertension or diabetes, as well as any past history of significant trauma. On physical examination, no definite cardiac murmur was auscultated. A chest x-ray showed a bulging silhouette at the right border of the heart. Electrocardiographic findings showed no significant abnormalities. Two-dimensional echocardiography showed an abnormal echolucent large mass lesion at the right atrial side, suggesting an intraright atrial mass, pericardial cyst, or aneurysm. To determine the exact location of the mass and its relation to the right atrium, a contrast echocardiogram with intravenous agitated saline injection was performed. This revealed an extracardiac mass compressing the right atrium without contrast filling (Figure 1, Movie I). To clarify the communication with the left-side chamber, perfluorocarbon-exposed sonicated dextrose albumin, a pulmonary circulation passing contrast agent, was injected via an antecubital vein. Contrast echocardiogram with perfluorocarbon-exposed sonicated dextrose albumin showed contrast filling in the mass after opacification of the left ventricular cavity, suggesting a coronary aneurysm (Figure 2, Movies II and III). Additionally, an abnormal continuous flow entering into the main pulmonary artery was noted, suggesting the drainage of a giant coronary aneurysm (Figure 3, Movie IV). With this in mind, multislice computed tomography and conventional

angiography were performed to confirm the diagnosis. Similar to the echocardiographic findings, a huge coronary aneurysm feeding from the right coronary artery and draining to the main pulmonary artery was detected (Figure 4). The patient underwent removal of the aneurysm, combined with bypass grafting surgery. The patient was later discharged without any complications.

In contrast to agitated saline, a perfluorocarbon-based contrast agent can pass through microcirculation, such as a pulmonary capillary, and can then opacify the left-side cardiac chambers and arterial structures.<sup>1</sup> This case demonstrates that the combined use of these 2 types of contrast agents can provide vital information in the clarification of intra- or extracardiac mass characteristics.

### Disclosures

None.

### Reference

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The online-only Data Supplement, consisting of Movies I through IV, is available with this article at <http://circ.ahajournals.org/cgi/content/full/115/19/e452/DC1>.

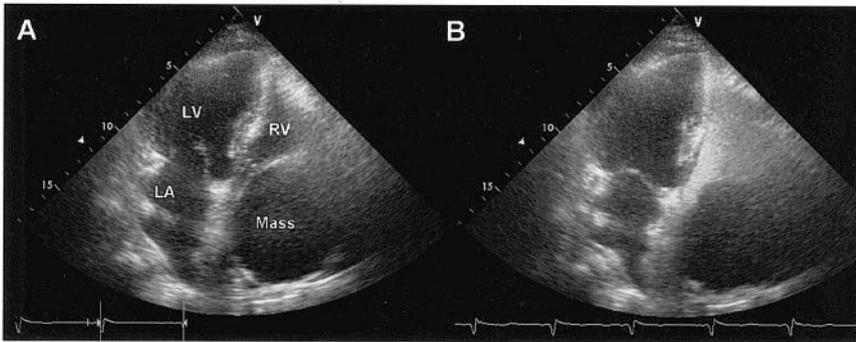
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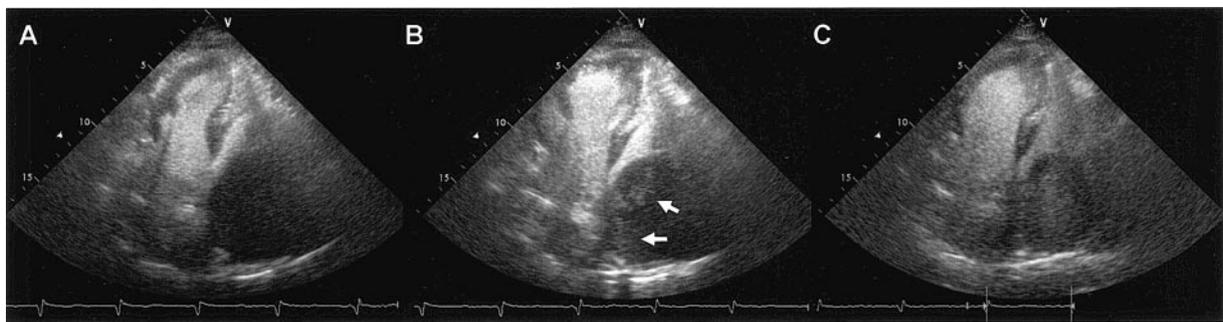
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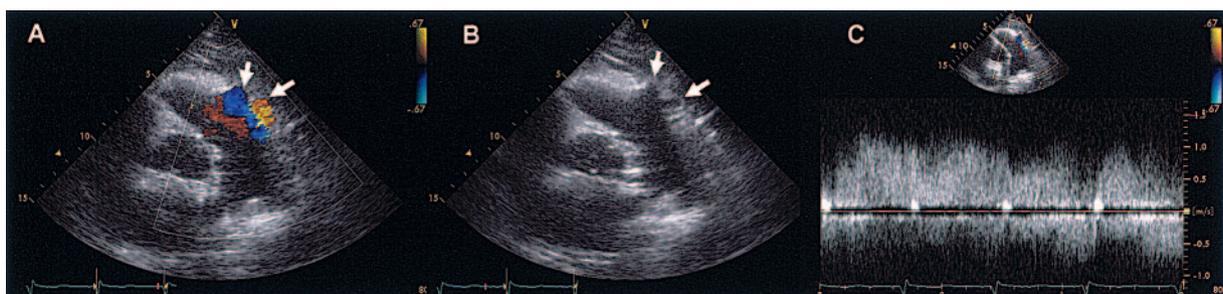
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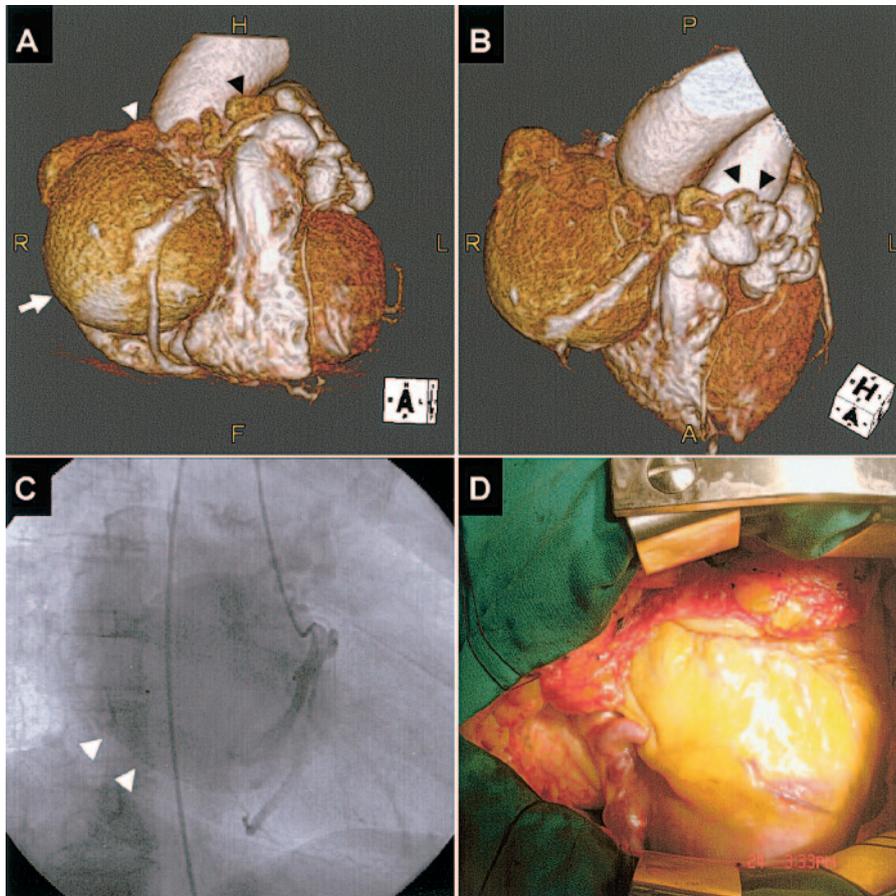
**Figure 1.** A, Apical 4-chamber view showing an echolucent large mass lesion in the right atrial side. B, Contrast echo with intravenous agitated saline, showing an extra-right atrial compressing mass without contrast filling (Movie I). LA indicates left atrium; LV, left ventricle; RV, right ventricle.



**Figure 2.** Sequential filling of the perfluorocarbon-exposed sonicated dextrose albumin (PESDA). A, Contrast echo with pulmonary circulation passing contrast agent, PESDA, showing contrast filling in the left ventricle cavity without filling of the right atrial mass. B, PESDA entering the mass (arrow heads) after initial opacification of the left ventricular cavity (demonstrated by Movie II). C, Full-contrast filling of the right atrial mass (Movie III).



**Figure 3.** Echo (A) and color Doppler (B) findings showing an abnormal flow entering the main pulmonary artery (arrows) (Movie IV). C, Pulsed-wave Doppler finding showing the nature of its continuous flow.



**Figure 4.** A and B, Multislice computed tomography findings showing a giant coronary aneurysm originating from the right coronary artery (white arrows) and draining into main pulmonary artery (arrow heads). C, Coronary angiography showing a giant right coronary aneurysm (arrow heads) draining into the pulmonary artery, similar to the multislice computed tomography findings. D, Surgical view of the 10-cm giant right coronary artery aneurysm compressing the right atrium.