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IMAGES IN CARDIOLOGY

Ruptured Aneurysm of the Sinus of Valsalva

Insights From Magnetic Resonance First-Pass Myocardial Perfusion Imaging

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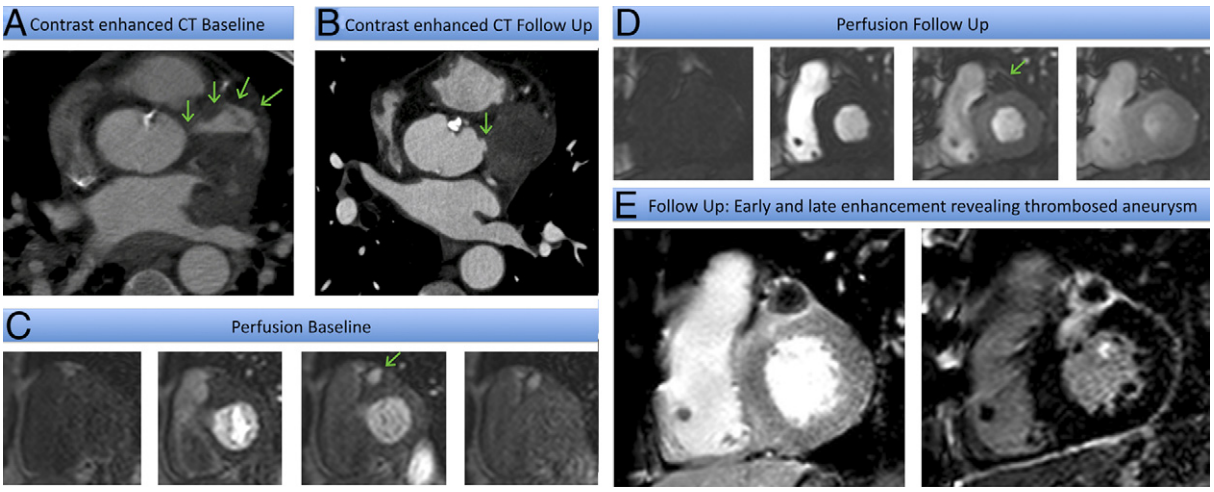

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A 58-year-old man presented with anterior non–ST-segment elevation myocardial infarction. Echocardiography showed a large pericardial effusion that was drained and found to be hemorrhagic. Angiography revealed "unobstructed" coronary arteries, whereas contrast-enhanced computed tomography (CT) showed some extravasation of contrast suggestive of a ruptured sinus of Valsalva aneurysm **(A, arrows)**. Cardiovascular magnetic resonance (CMR) was performed, visualizing a structure adjacent to the anterior wall. First-pass perfusion demonstrated its communication with the aortic root but no extravasation of contrast into the pericardial space (**C, arrow**, Online Video 1). There was also a small anterior transmural scar. During cardiac surgery, a small, closed dimple deep in a recess immediately above the annulus was visualized not needing further intervention (follow-up CT, **B, arrow**). On follow-up CMR, the structure did not show first-pass perfusion (**D, arrow**, Online Video 2) and appeared to be thrombosed **(E)**. Diagnosis of a ruptured small aneurysm of the sinus of Valsalva with extra-aortic hematoma probably compromising a small branch coronary artery was made.