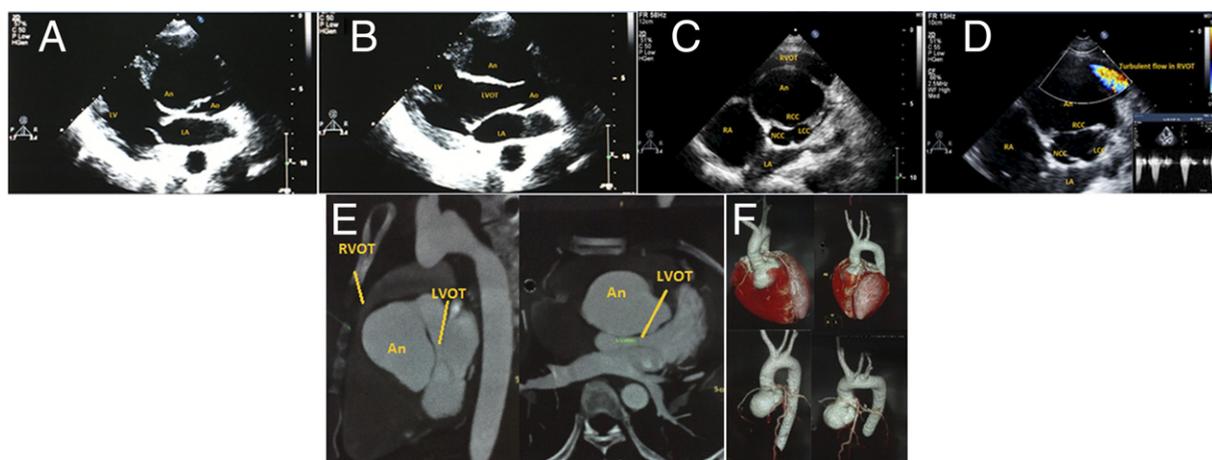


IMAGES IN CARDIOLOGY

Unruptured Aneurysm of the Sinus of Valsalva Presenting With Right Ventricular Outflow Tract Obstruction, Complete Heart Block, and Protrusion Into Left Ventricular Outflow Tract

A Rare Combination

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A 20-year-old male presented with exertional dyspnoea and exertional presyncope of 7 months duration, 1 episode of syncope 6 months ago with worsening dyspnea since 1 week. Examination revealed an ejection systolic murmur in the pulmonary area. The electrocardiogram showed complete heart block. Echocardiography showed a large unruptured aneurysm of sinus of Valsalva arising from the right coronary cusp (RCC) protruding into the left ventricular outflow tract (LVOT), predominantly filling in diastole (**A**) and partly collapsing in systole (**B**, Online Video 1). There was no flow acceleration or systolic gradients across the LVOT at rest with trivial aortic regurgitation (**A**, **B**, Online Video 2). The aneurysm extended into the interventricular septum. In short axis view the aneurysm was seen compressing the right ventricular outflow tract (RVOT) with systolic gradients across RVOT of 42 mm Hg (**C**, **D**, Online Videos 3 and 4). Cardiac computed tomography with aortogram with 3D reconstruction (**E**, **F**) revealed a large saccular dilation of the RCC measuring approximately $53 \times 40 \times 49$ mm having thin lobulated margins with no evidence of thrombus or perianeurysmal leak. The protrusion of aneurysm arising from the RCC into the LVOT as well into the RVOT causing significant RVOT obstruction along with extension into the interventricular septum producing complete heart block is extremely rare. Echocardiography and computed tomography provided the required information without need for cardiac catheterization. Patient underwent uneventful surgery followed 2 weeks later by permanent pacemaker insertion. An = aneurysm.