CARDIAC IMAGING QUIZ

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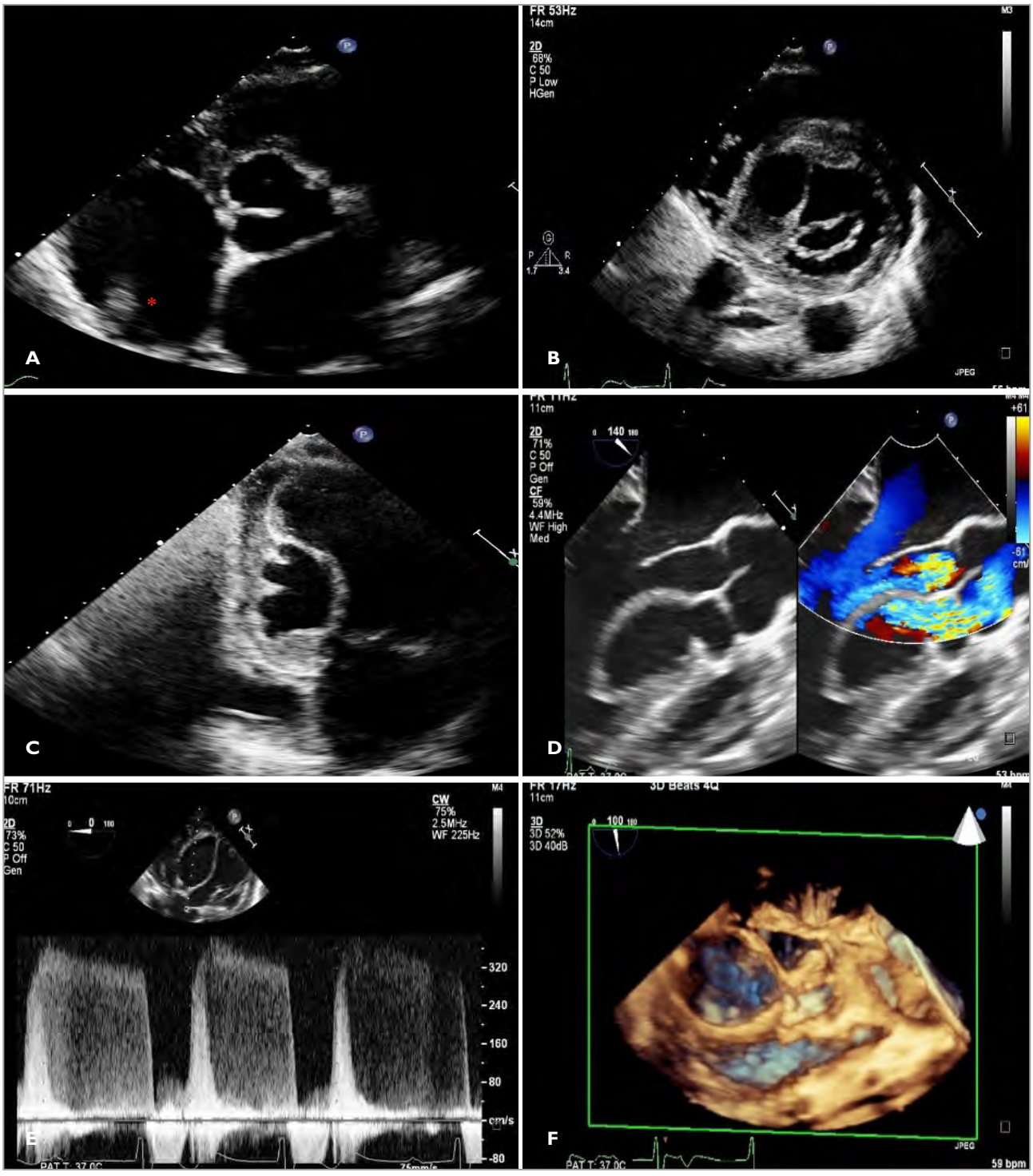

QUESTION: What is the diagnosis?

A. Infective endocarditis B. Aortic aneurysm C. Sinus of Valsalva aneurysm D. Coronary arterial-venous fistula

ANSWER

C. Sinus of Valsalva aneurysm involving the right coronary sinus (A, short axis view) complicated by aortic regurgitation (D, E), erosion into the interventricular septum (B, short axis view and C, 2 chamber view; D, long axis view and F, 3D reconstruction) and complete heart block (A, right atrial / ventricular lead marked with asterisks).

These images belong to a 50-year-old male who presented in heart failure and complete heart block.

A sinus of Valsalva aneurysm (SVA) results from a weakness in the elastic lamina at the junction between the aortic media and the annulus fibrosus. Although the true prevalence is unclear, autopsy studies suggest that SVAs occur in less than 0.1% of the general population. These aneurysms can be congenital, and may be linked to connective tissue disorders such as Marfan syndrome, or acquired due to conditions like syphilis or atherosclerosis. They most frequently develop from the right coronary sinus (in 70% of cases), and less frequently from the non-coronary sinus (in 25%). If rupture occurs, the resulting shunt typically leads to the right ventricle or right atrium. Complications such as right ventricular outflow obstruction, coronary artery compression with infarction, conduction disturbances, endocarditis, and thrombus formation within the aneurysmal cavity have also been reported. While many patients remain asymptomatic, some may experience chest pain, shortness of breath, or heart failure. Rupture is a serious complication that can result in life-threatening conditions, including shock or the formation of an aortic fistula. Diagnosis is usually confirmed through echocardiography, CT, or MRI, and surgical repair is the standard treatment, particularly for large or symptomatic aneurysms. Without treatment, rupture can be fatal, but early detection and surgical intervention typically result in a favourable prognosis.

Conflict of interest: none declared.

SUGGESTED READING

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