A spontaneously closed, acquired supravalvular Gerbode defect mimicking an unruptured sinus of Valsalva aneurysm

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A 40-year-old man who had a past history of bicuspid aortic valve (BAV) presented with low-grade fever for 6 weeks and rapidly progressive dyspnoea for 1 day. He was hypothermic (35.9°C) with a blood pressure of 75/53 mmHg and a pulse rate of 106/min. On cardiac auscultation, there was a Grade 3/6 diastolic murmur at the right upper sternal border. A transoesophageal echocardiography (TEE) was undertaken due to suboptimal transthoracic echocardiographic (TTE) imaging quality and suspected infective endocarditis (IE), which demonstrated multiple irregular-shaped, oscillating vegetations (Panel A) attached to the aortic valve with a small aortic root abscess (Panel B) and severe aortic regurgitation (Panel C). The short-axis view of TEE revealed an aneurysmal outpouch adjacent to the posterior coronary sinus with colour flow contained within it and protruding into the right atrium (Panels D–F; see Supplementary data online, Movie S1). It resembled an unruptured sinus of Valsalva aneurysm that was not observed in the patient's previous TTE finding (Panel G) and was considered to be an acquired lesion consequent to IE. Intraoperatively, multiple vegetations attached to the aortic leaflets with perforation of the right cusp and a small aortic root abscess were confirmed. A 15-mm membranous septal defect (Panel H) with a left ventricular—right atrial communication (Panel J) covered by an aneurysmal transformation of the tricuspid septal leaflet (Panel I), which looked inflamed but without perforation, was identified. These findings indicate the presence of a spontaneously closed, acquired supravalvular Gerbode-type defect resulting from IE of the adjacent BAV without causing an intracardiac shunt, which mimicked an unruptured sinus of Valsalva aneurysm preoperatively. Cultures of the removed vegetations grew Cardiobacterium hominis.

The long-axis view of TEE at the mid-oesophageal level demonstrating multiple vegetations attached to the aortic valve (Panel A, arrow), a small aortic root abscess (Panel B, arrow), and a severe aortic regurgitation (Panel C). The short-axis view demonstrating an aneurysmal outpouch bulging into the right atrium (Panel D, arrow) with colour flow at systolic and diastolic phases (Panels E and F). The previous TTE finding did not reveal this lesion (Panel G). Intraoperatively, resecting the aortic valve and exploring a membranous septal defect (Panel H, arrow). Right atriotomy demonstrating an aneurysmal transformation of the tricuspid septal leaflet (Panel I, arrow). Resecting the transformed tricuspid septal leaflet demonstrating a communication between the left ventricle and the right atrium (Panel J, arrow). LA, left atrium; LV, left ventricle; AV, aortic valve; AO, aortic root; RA, right atrium; PA, pulmonary artery.

Supplementary data are available at European Heart Journal — Cardiovascular Imaging online.