Ruptured aneurysm of non-coronary sinus of valsalva as a rare cause of chest pain

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A 44-year-old male, smoker, with a history of arterial hypertension and 4 years after surgery for Cushing’s disease due to pituitary adenoma was referred to hospital due to typical coronary chest pain. At admission, ECG was non-specific, a continuous murmur and blood pressure of 100/60 mmHg was detected. Laboratory assessment showed a normal D-dimer value, two-fold elevation of troponin-T and no signs of inflammation. Transthoracic echocardiography (TTE) revealed normal left ventricular systolic function and kinetics, intact valvular apparatus; however, a communication between non-coronary sinus of valsalva (SV) and right atrium was detected (Panels A and B; parasternal and apical view). A billowing tissue associated with shunting was found under the septal cusp of the tricuspid valve (Panel C) that suggested perforated aneurysm (Panel D; 3D-TTE reconstruction). Neither volume nor pressure overload signs were present (Panel E; continuous Doppler flow in the subcostal view). A CT scan excluded additional aortic pathology and supported the diagnosis suspected (Panels F and G; VRT and MPR reconstruction). Patient acutely underwent cardiac surgery, where perforated aneurysm of non-coronary SV was confirmed (Panel H and I; aneurysmatic ruptured duct ending in the right atrium). Valve-sparing patch repair of the aortic root along with aneurysmal resection was performed, and the patient was discharged uneventfully.

Sinus of valsalva aneurysms are rare cardiac abnormalities with an incidence of 0.1%. The most common cause is congenital, but also may be acquired (e.g. through infection, degenerative disease, or trauma). Rupture may have a wide clinical presentation and is indicated for prompt surgery. Diagnosis can be rapidly made by TTE.

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