Trifoliate sinus of Valsalva pseudoaneurysms with aortocavitary fistula: a critical complication of infective endocarditis

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DESCRIPTION

A 35-year-old woman was admitted to the hospital with complaints of high-grade fever for 1 week and sudden onset of shortness of breath. No specific risk factors of infective endocarditis including drug abuse or history of dental procedure were present. A transthoracic echocardiography was performed which revealed thickened aortic valve leaflets with a large multilobulated outpouching from the aortic sinus. The patient was further referred for a CT angiography (CTA) for further delineation of the pathology and to look for any associated complications.

Review of CTA images revealed thickened aortic valve leaflets along with pseudoaneurysms (*) arising from each of the three sinuses of Valsalva (figure 1A–D); the largest one from the left sinus of Valsalva was also seen communicating with the left ventricular outflow tract (figure 2A). Presence of peripherally enhancing pericardial collections and para-aortic soft tissue was also noted (figure 2B). The right and left coronary arteries were seen arising cranial to the pseudoaneurysms from the respective sinuses.

Secondary to aortic valve infective endocarditis, infection can spread from valvular structures to the adjacent perivalvular tissue resulting in perianular complications such as abscesses and pseudoaneurysms involving the sinuses of Valsalva. These complications pose an increased risk of heart failure

Figure 2 Oblique axial section (A) reveals communication of the pseudoaneurysm (*) arising from the left sinus of Valsalva with the LVOT. Axial section (B) shows presence of peripherally enhancing pericardial collections and para-aortic soft tissue. LVOT, left ventricular outflow tract.

as well as mortality.¹ These pseudoaneurysms may rupture internally forming aortocavitary fistulae which causes intracardiac shunting resulting in further haemodynamic instability and clinical deterioration.¹

Learning points

- Complications such as sinus of Valsalva pseudoaneurysms and abscesses may develop secondary to aortic valve infective endocarditis due to spread of infection from valvular structures to the adjacent perivalvular tissue.
- Pseudoaneurysms may rupture internally forming aortocavitary fistulae which causes intracardiac shunting resulting in further haemodynamic instability and clinical deterioration.

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Figure 1 Volume rendered images of CT angiography (A,B) reveal large pseudoaneurysms (*) arising from each of the three sinuses of Valsalva. Virtual dissection images (C,D) clearly delineate the necks of the pseudoaneurysms (arrowheads). The right and left coronary arteries are seen arising cranial to the pseudoaneurysms from the respective sinuses.

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