Case report - Cardiac general

Interatrial rupture of a non-coronary sinus of Valsalva aneurysm: a rare presentation of a rare disorder

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Abstract

A 65-year-old male was referred to our team after the incidental finding of a large non-coronary sinus of Valsalva aneurysm on computed tomography (CT)-scan of the thorax. Further imaging with transesophageal echocardiography (TOE) excluded intracardiac shunting. Unusually, the aneurysm had ruptured into the interatrial septum and was seen to be compressing both atria. At operative intervention, a 20 mm defect which had replaced the non-coronary sinus was repaired using a patch graft. An aneurysm of an aortic sinus is a rare disorder, and a rupture of a non-coronary sinus typically results in the formation of a fistulous tract in the right atrium. These images highlight an unusual case of a non-coronary sinus of Valsalva aneurysm which ruptured into the interatrial septum (IAS), and demonstrate the benefit of multi-modality cardiac imaging in guiding surgical repair.

Keywords: Sinus of Valsalva; Aneurysm; Multi-modality imaging

1. Case report

A 65-year-old male, under investigation for weight loss, was referred to the cardiothoracic team after computed tomography (CT)-scan of the thorax revealed the incidental finding of a large non-coronary sinus of Valsalva aneurysm on computed tomography (CT)-scan of the thorax. Further imaging with transesophageal echocardiography (TOE) excluded intracardiac shunting. Unusually, the aneurysm had ruptured into the interatrial septum and was seen to be compressing both atria. At operative intervention, a 20 mm defect which had replaced the non-coronary sinus was repaired using a patch graft. An aneurysm of an aortic sinus is a rare disorder, and a rupture of a non-coronary sinus typically results in the formation of a fistulous tract in the right atrium. These images highlight an unusual case of a non-coronary sinus of Valsalva aneurysm which ruptured into the interatrial septum (IAS), and demonstrate the benefit of multi-modality cardiac imaging in guiding surgical repair.

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2. Discussion

An aneurysm of an aortic sinus is a rare disorder, with an estimated prevalence of 1% in patients undergoing open-heart surgery [1]. These lesions are usually congenital, although cases associated with syphilis, infective endocarditis, trauma, atherosclerosis and aortic dissection have been described [2, 3]. They may remain clinically silent until rupture causes symptoms related to compression of adjacent structures or intracardiac shunting [4]. Between 65% and 85% of sinus of Valsalva aneurysms originate from the right sinus of Valsalva, with 10–20% originating from the non-coronary cusp. Aneurysms arising from the left coronary sinus are relatively rare (<5%) [5].

Rupture of a non-coronary sinus aneurysm typically results in the formation of a fistulous tract with the right atrium (RA), while rupture of right coronary sinus aneurysm frequently lead to fistulous communication with the right ventricle [1, 6].
was apparently asymptomatic following the rupture, probably due to an absence of intracardiac shunting.

The diagnosis was made using multi-modality cardiac imaging. CT imaging was particularly useful for clarifying the relationship of the aneurysm to adjacent structures as well as eloquently demonstrating the course of the aneurysmal rupture. TOE added further anatomical information but also, crucially, excluded the possibility of intracardiac shunting. These investigations helped guide a successful treatment which was achieved by surgical intervention.

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References