An unexpected quadricuspid aortic valve revealed by multislice computed tomography

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We report a case where a 58-year-old woman with no significant past medical history presented with chest pain. Clinical examination of heart sounds revealed an aortic incompetence. The electrocardiogram (ECG) and plasma levels of cardiac troponin I were normal. Trans-thoracic echocardiography was performed and revealed a normal left ventricular function and no pericardial effusion, a medium aortic incompetence (arrow) but aortic valve morphology could not be assessed (Panels 1 and 2) even in the short-axis. Cardiac multislice computed tomography (MSCT) was performed with an ECG-gated acquisition in order to rule out a coronary atherosclerosis. MSCT reconstructions (Panels 3 and 4) revealed a quadricuspid aortic valve with three equal cusps including one right coronary cusp (A), one left coronary cusp (B), a non-coronary cusp (C), and one smaller accessory cusp (D) with a central incompetence (arrow). On the other hand, MSCT (Panels 5 and 6) showed a right coronary second segment significant stenosis (star). Therefore, conventional angiography confirmed the right coronary significant stenosis which was treated by stent. The aortic regurgitation did not require surgical treatment but a close follow-up.

Quadricuspid aortic valve is a rare congenital cardiovascular disorder. Only a few cases have been reported in the literature. This pathology often leads to aortic valve regurgitation that requires surgical treatment. This case illustrates multiple MSCT benefits, a characterization of native cardiac valves with inadequate images from other non-invasive methods and a coronary evaluation in this patient with intermediate risk of coronary disease presenting with acute chest pain and both negative enzymes and ECG.

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