

Anomalous origin of the left circumflex coronary artery and potential fatal complication in aortic valve replacement

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The most frequent congenital coronary variant is the anomalous origin of the left circumflex coronary artery, from either the right coronary artery or the right sinus of Valsalva (RSV) 1. The prevalence of this anomaly is about 0.08 to 0.67%, and it remains asymptomatic 3. Unless such anomaly is recognised and dealt with cautiously, it can result in potentially fatal complications in case of aortic valve replacement (AVR).

Case presentation:

A 72 years old woman underwent an elective straightforward AVR with implantation of a bioprosthesis valve without intra-operative complications. She was extubated on day one. The patient developed acute pulmonary oedema on day three. The patient was re-intubated and diagnosed with a new severe mitral regurgitation on transoesophageal echocardiography (TOE). Urgent coronary angiogram revealed a proximally occluded circumflex artery arising from the RSV, most likely due to kinked aortic valve sutures. The patient was taken back to theatre for coronary artery bypass grafting for blocked circumflex and had vein graft to obtuse marginal branch. The patient recovered well from the procedure. She represented with recurrent acute pulmonary oedema, and subsequent TOE revealed severe ischemic mitral regurgitation, severe functional tricuspid regurgitation and high pulmonary artery pressure. The patient was discussed at the multi-disciplinary meeting and underwent mitral valve replacement and tricuspid valve repair with an annuloplasty ring. The patient recovered well from the procedure and discharged for rehabilitation.

Conclusion:

Although adequate preoperative imaging confirmed the anomalous origin of the left circumflex origin, detailed attention should be given to aortic valve replacement procedures due to the proximity of the circumflex artery anomalous origin to the aortic valve.

Recent Publications

1. Pellicano M, Toth G, Di Gioia G et al. [Unrecognized anomalous left circumflex coronary arter arising from right sinus of Valsalva: a source of perioperative complication.](#) J Cardiovasc Med 2016, 17 (suppl 2):e228–e230
2. Hergault H, Mouillet G, Ternacle J and Bergoend E. [Successful percutaneous treatment of an anomalous left circumflex coronary artery occlusion after tricuspid valve repair.](#) Interactive CardioVascular and Thoracic Surgery (2019) 1–3
3. Harky A, Hof A, Ahmad M and Uppal R. Incidental finding of anomalous circumflex coronary artery from right coronary sinus prior to aortic valve surgery. BMJ Case Rep 2017. doi:10.1136/bcr-2017-219265
4. Dai Q, Song J, He J and Xu B. A Rare Case of Anomalous Original Left Circumflex Artery Stenosis After Artificial Mitral Valve Replacement. JACC: CARDIOVASCULAR INTERVENTIONS VOL. 10, NO. 7, 2017

Biography

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Received: January 27, 2022; Accepted: January 31, 2022; Published: April 10, 2022