Unusual echocardiographic image of a left circumflex coronary artery with anomalous origin from the right coronary sinus

Stefano Bonapace¹, Edoardo Adamo¹, Carmelo Cicció², Andrea Chiampan¹, Guido Canali¹, and Filippo Valbusa²*  
¹Division of Cardiology, ‘Sacro Cuore’ Hospital, Negrar, VR, 37024, Italy; ²Department of Diagnostic Imaging, ‘Sacro Cuore’ Hospital, Negrar, VR, Italy; and ³Division of Internal Medicine, ‘Sacro Cuore’ Hospital, Negrar, VR, Italy  
* Corresponding author. Tel: +39 045 6013111, Fax: +39 045 7500480, Email: filippo.valbusa@sacrocuore.it

A 38-year-old woman presented with chest pain. An echocardiography showed an unusual image of double binary above the mitral annulus (arrow) in apical two- and four-chambers view (Panel A and B, Supplementary material online, Movies S1 and S2) consistent with a vessel (Panel C, Supplementary material online, Movie S3). The remaining echocardiographic examination was normal. A cardiac computed tomography (CT) scan multi-planar-reformatted image (MPR-MPI) with maximum intensity projection showed anomalous origin of left circumflex coronary artery (LCX) from right coronary sinus with separate ostia from right coronary artery (RCA) and with retroaortic course of LCX between Aorta and left atrium without kinking, compression or luminal narrowing (Panel D). Computed tomography scan volume-rendering technique (VRT) image (Panel E) and MPR-curved image (Panel F) shown LCX traversing the atrio-ventricular groove (Vsn, left ventricle). The VRT image corresponds to the echocardiographic apical four-chamber view confirming that the double binary image seen on echocardiography corresponds to the atrio-ventricular groove course of the anomalous LCX. Anomalous origin of LCX from right coronary cusp is rare and has a prevalence of 0.18–0.67%. It is classified in three types: type I with separate ostia for RCA and LCX, type II with common ostia in the right sinus, and type III with LCX arising as a branch of proximal RCA. This unusual echocardiographic finding should rise the suspicion of the presence of anomalous LCX origin from the right coronary sinus warranting more accurate evaluation with coronary CT scan.

Supplementary material is available at European Heart Journal online.