

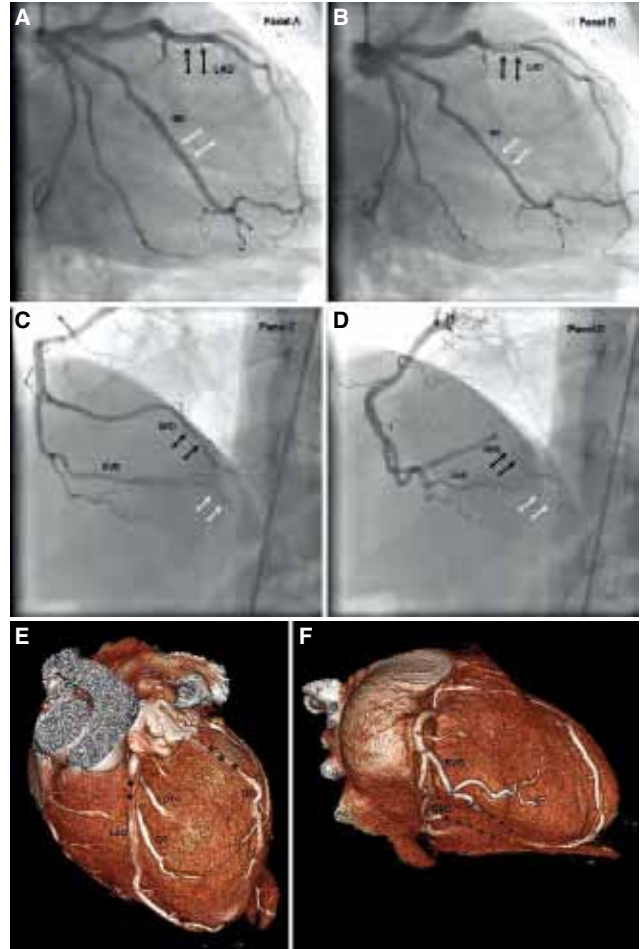
Three-vessel myocardial bridging causing severe angina

Ciddi anjinaya sebep olan üç damar miyokart köprüleşmesi

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A 34-year-old male patient was admitted to our outpatient clinic with the complaints of chest pain and dyspnea on exertion, which had worsened over the past six months. His physical examination was normal except for the fourth heart sound on auscultation. His risk factors for coronary artery disease (CAD) included smoking, hyperlipidemia, diabetes mellitus, and a family history of premature CAD. There was no abnormality on the electrocardiogram. Transthoracic echocardiography revealed concentric hypertrophy of the left ventricle without systolic anterior motion of the mitral valve and outflow tract obstruction. The patient was diagnosed as hypertrophic cardiomyopathy (HCM). Due to exercise-limiting angina and multiple risk factors for CAD, the patient underwent coronary angiography, which showed no atherosclerotic involvement in coronary arteries, but myocardial bridging of all major coronary branches with varying systolic compressions - 100% for right posterior descending artery and distal right ventricular branch and 50% for intermediary artery and mid left anterior descending (LAD) artery (Figs. A-D, Videos 1, 2*). The intramyocardial course of arterial segments was demonstrated with multidetector computerized tomography (CT) angiography as shown in Figs. E, F. The patient's symptoms were controlled with initiation of medical therapy with 200 mg metoprolol. No implantable cardioverter defibrillator (ICD) was implanted due to the absence of high risk factors associated with sudden death. Myocardial bridging (MB) is a congenital condition in which a segment of a major epicardial coronary artery has an intramyocardial course. The reported incidence of MB seen on coronary angiography ranges from 0.5% to 16%, with the vast majority of cases being confined to the LAD artery, typically in the middle segment. Higher incidences of MB were reported in patients with HCM. Although rare, MB involving two vessels -LAD and right coronary arteries- has been reported. In the present case, MB was observed in three major coronary arteries, which has not been reported in the literature previously.



Figures— RAO view with caudal angulation showing left coronary arterial system in diastolic (A) and systolic (B) frames. Note 50% systolic compression of LAD at its mid segment and diffuse 50% systolic compression of the IM artery along its mid segment. Lower Panel: LAO view with cranial angulation showing RCA in diastolic (C) and systolic (D) frames. Note 100% systolic compression of RPD and RVB at its distal segment where it enters the posterior interventricular sulcus. (E) Volume-rendered image from MDCT showing bridging segment of LAD and IM arteries. Intramyocardial course of corresponding arteries is shown with asterisk. Note the long bridging segment of the IM artery in contrast to the LAD, where it is confined to the inter-diagonal segment. (F) Volume-rendered image showing bridging segment of the RPD artery and RVB at its distal segment, where it enters the posterior interventricular sulcus. IM: Intermediary; LAD: Left anterior descending; LAO: Left anterior oblique; RAO: Right anterior oblique; RPD: Right posterior descending; RVB: Right ventricular branch; MDCT: Multidetector computed tomography. *Supplementary video files associated with this presentation can be found in the online version of the journal.

