

VISUALIZATION OF CORONARY COLLATERALS ON 64 SLICE MDCT A REINJECTION OF LAD FROM COLLATERALS OF RCA

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A 57 years old man known diabetic, hypertensive, and ex-smoker with BMI of 27Kg / m² had anterior wall myocardial infarction (AWMI). His conventional Coronary angiography was done which revealed Three Vessel coronary artery Disease (TVD). The Left anterior Descending (LAD) artery was occluded proximally and its distal part was not visualized. He was referred for LAD visualization on 64 slice Multi Detector Computerized Tomography (MDCT).

The Volume rendering (VR) images of MDCT are shown below (figure 1 and 2). There is

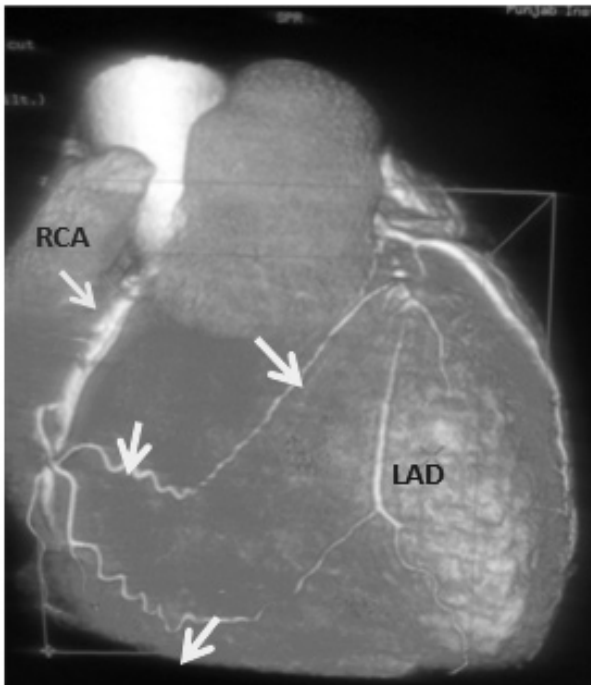


Figure 1:

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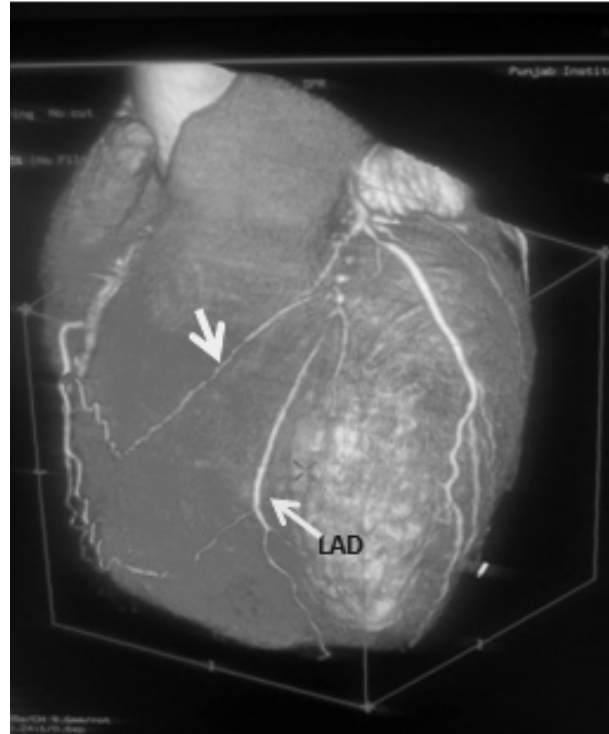


Figure 2:

total proximal occlusion of LAD. Morphology of the LAD plaque was of mixed type. Sizeable LAD was visualized in these VR images in mid segment which measured ~ 2mm in oblique plane (a good target for surgical revascularization) and distal segment was of small size less than 1 mm. These VR images also show two collaterals (black arrows) from mid segment of Right Coronary artery (RCA) going to mid and distal segments of LAD. Development of coronary collaterals is a natural protective mechanism to deal with acute and chronic ischemia. Coronary artery collaterals (CAC) are “natural bypasses” formed due to anastomosis between portions of the same coronary artery or different coronary



arteries with no intervening capillary circulation.¹ Presence of coronary collateral circulation has important prognostic implications.² Coronary CT angiography has also been used to assess the transluminal attenuation gradient

(TAG), an intracoronary luminal attenuation, which can help determine the extent and direction of flow in collateral conduits and hence hemodynamic significance of coronary artery stenosis non-invasively.³

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