

Best Competition for Life: Dual Bridge Collaterals Supplying LAD on Both Tails of Moustache

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Abstract

Coronary collateral flow is crucial for cardiovascular mortality and morbidity in coronary artery disease. We report a unique case with preserved left ventricle functions in the presence of dual collateral flow to occluded LAD by the way of two tails of moustache of LAD besides continuation of collateral flow from conus branch of RCA to first diagonal branch although there is no critical stenosis on first diagonal branch.

Key words: Atherosclerosis; coronary collateral flow

Herein we report a unique case with occluded left anterior descending (LAD) artery supplied both by conus branch of right coronary artery and first diagonal branch of LAD.

Case Report:

Forty-eight year-old male patient was admitted to our institution with chief complaints of shortness of breath and atypical angina. His medical history revealed hypertension, hypercholesterolemia for which he was prescribed atorvastatin 40mg/day besides family history of coronary artery disease (CAD). His physical examination was normal besides normal cardiac enzymes (repeated for twice) and ECG in normal sinus rhythm without any significant changes suggesting myocardial ischemia.

Transthoracic echocardiography revealed normal cardiac chamber sizes and normal left ventricular systolic functions besides concentric hypertrophy of left ventricular walls. Exercise test that he had undergone two weeks earlier revealed normal ECG findings at 12.4 METS without inducing angina, shortness of breath or any other atypical symptoms. We have offered coronary angiography for diagnostic uncertainty in case of atypical symptoms in the presence of normal findings on transthoracic echocardiography and on exercise stress test. Coronary angiography was performed by femoral arterial approach and revealed occluded LAD after first diagonal branch besides 80% stenotic lesion on 3rd obtus marginalis and atherosclerotic plaque on right coronary

artery. Conus branch of right coronary artery retrogradely supplied LAD with bridge collateral by the way of one tail of moustache (Figure 1, Movie 1) whereas first diagonal branch of LAD retrogradely supplied LAD with bridge collateral by the way of the other tail of moustache (Figure 2, Movie 2). We have also noticed that the bridge collateral originated from conus branch of right coronary artery

retrogradely supplied first diagonal branch of LAD after retrogradely feeding totally occluded LAD although no significant atherosclerotic lesion was present on first diagonal branch of LAD (Figure 1, Movie 1). Based on the symptoms and coronary angiography findings our patient underwent coronary bypass grafting and he was well on sixth month follow-up control.

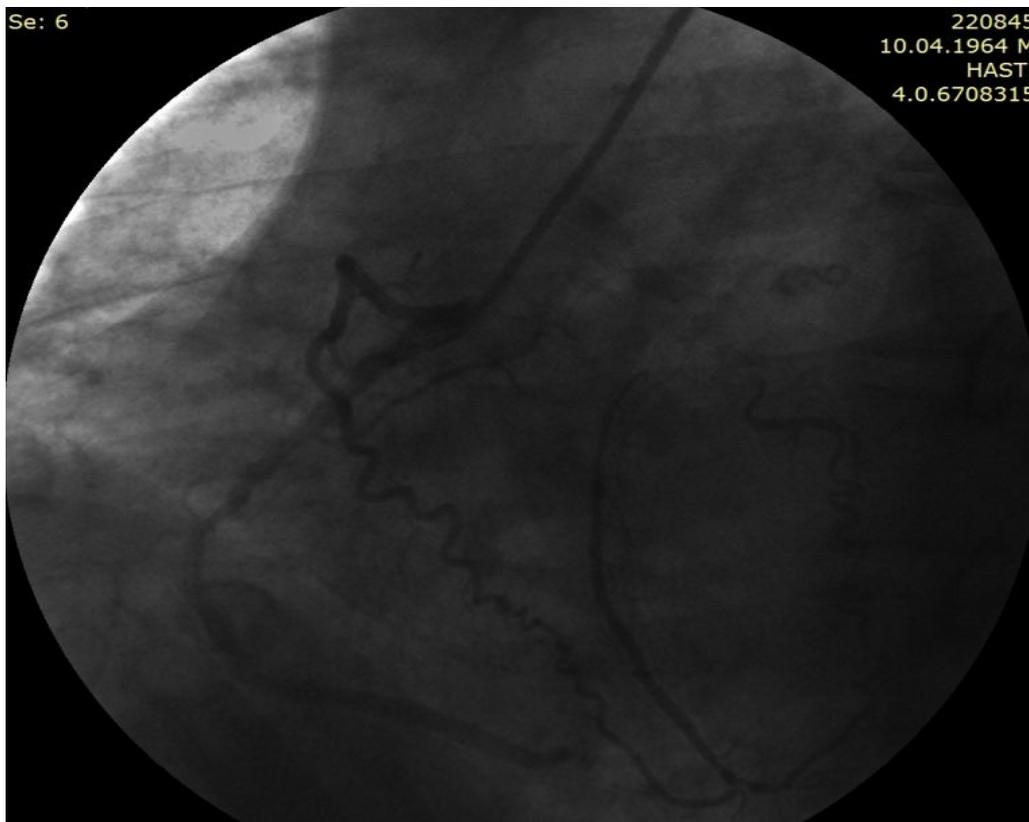


Figure 1

Figure revealing bridge collateral from conus branch of right coronary artery retrogradely supplying left anterior descending coronary artery and non-atherosclerotic first diagonal branch of left anterior descending coronary artery.

Movie 1

Coronary angiography showing bridge collateral from conus branch of right coronary artery retrogradely supplying left anterior descending coronary artery and non-atherosclerotic first diagonal branch of left anterior descending coronary artery. (The Movie 1 can be obtained from corresponding author)

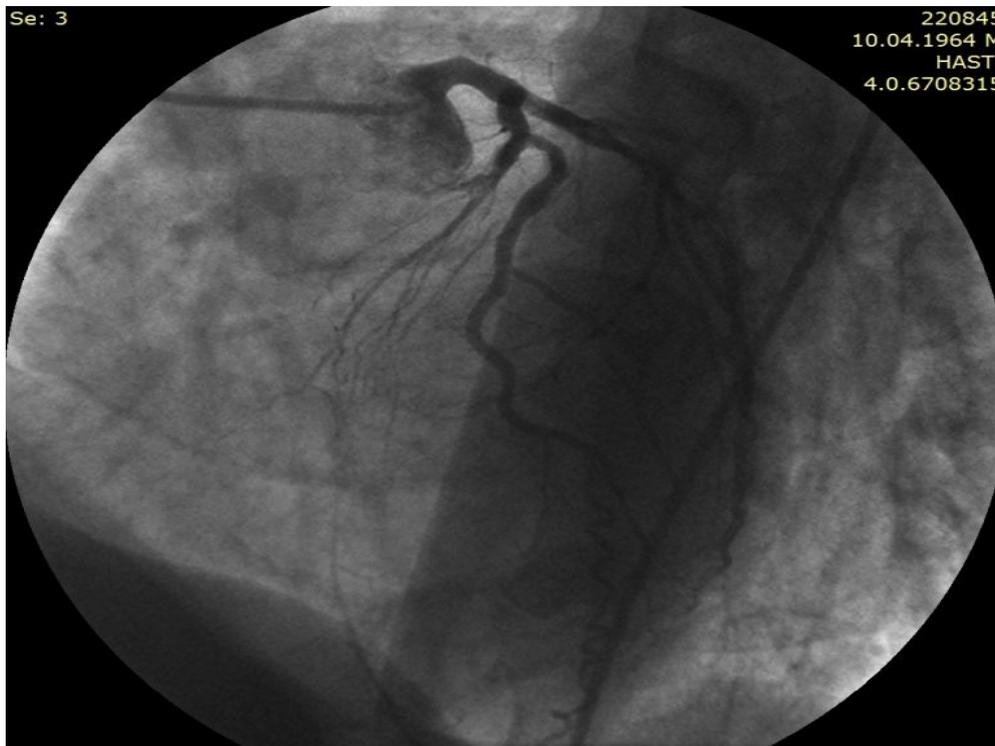


Figure 2

Figure revealing bridge collateral from first diagonal branch retrogradely supplying left anterior descending coronary artery.

Movie 2

Coronary angiography showing bridge collateral from first diagonal branch retrogradely supplying left anterior descending coronary artery. (The Movie 2 can be obtained from corresponding author)

Discussion

Coronary collateral flow is a vital predictor of cardiovascular mortality and morbidity both in acute coronary syndromes and in chronic coronary artery disease (1). Several determinants of the presence and grade of coronary blood flow exist such as the presence or absence of coronary occlusion, diabetes mellitus, smoking, severity of coronary artery stenosis, blood pressure, besides levels of several biochemical and hematological markers (2-

5). Peculiarity of the present case report is preserved left ventricle functions in the presence of dual collateral flow to occluded LAD by the way of two tails of moustache of LAD besides continuation of collateral flow from conus branch of RCA to first diagonal branch although there is no critical stenosis on first diagonal branch.

Conflict of interest

On behalf of all authors, the corresponding author states that there are no conflicts of interest.

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