Myocardial bridgings of the right coronary artery and left anterior descending coronary artery: very unusual form of myocardial bridge

Sağ koroner arter ve sol ön inen koroner arterin miyokardiyal köprüleşmesi: Miyokardiyal köprüleşmenin oldukça nadir görülen şekli

Hamza Duygu, Mehdi Zoghi, Bahadır Kırılmaz, Uğur Türk, Azem Akıllı

Department of Cardiology, Medical Faculty, Ege University, İzmir, Turkey

A 54-year-old male patient was admitted to our clinic with the complaint of chest pain on exertion for two months. His physical examination revealed blood pressure of 120/80 mmHg, pulse rate of 66 per minute and system examinations were normal. On the electrocardiogram, there was no abnormality. Transthoracic echocardiography revealed mild mitral regurgitation. Exercise stress testing was performed and it revealed horizontal ST segment depression of 1 to 2 mm in leads II, III, aVF and V5-6. Upon this, coronary angiography was done. Coronary angiography showed the typical 'milking effect' for myocardial bridge in right coronary artery (RCA) and left anterior descending coronary artery (LAD) (Fig. 1 and 2). In our case, myocardial bridge was observed in both LAD and RCA that has not been reported in the literature previously. The percentages of systolic compression were 30%. Beta-blocker therapy (metoprolol 100 mg daily) was started to the patient due to symptomatic myocardial bridge.

Myocardial bridge is an anatomical variation characterized by narrowing during systole of some of the epicardial coronary arterial segments running in the myocardium. It can be encountered in 0.5 to 2.5% of routine coronary angiographies (1). Although it is considered as a benign anomaly it may lead to such complications as acute myocardial infarction, ventricular tachycardia, syncope, atrioventricular block and sudden cardiac death (2-4). Therefore, myocardial bridge should be kept in mind in the symptomatic patients without atherosclerotic lesions on coronary angiography.

References

1. Juillie`re Y, Berder V, Suty-Selton C, et al. Isolated myocardial bridges with angiographic milking of the left anterior descending coronary artery: a long-term follow-up study. Am Heart J 1995;129:663–5.
2. Bauters C, Chmait A, Tricot O, et al. Coronary thrombosis and myocardial bridging. Circulation 2002; 105:130.
3. Tauth J, Sullebarger T. Myocardial infarction associated with myocardial bridging: case history and review of the literature. Cathet Cardiovasc Diagn 1997;40:364–7.
4. Rossi L, Dander B, Nidasio GP, et al. Myocardial bridges and ischemic heart disease. Eur Heart J 1980;1:239–45.

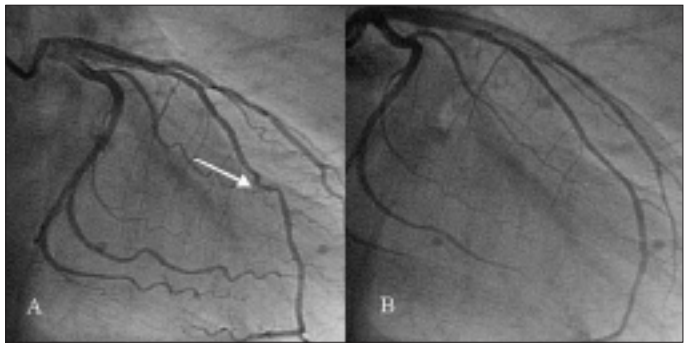

Figure 1. Coronary angiogram with myocardial bridging of the left anterior descending coronary artery in the right anterior oblique position (A). An absence of constriction during diastole is shown (B). This depicts the "milking effect" during systole (arrow).

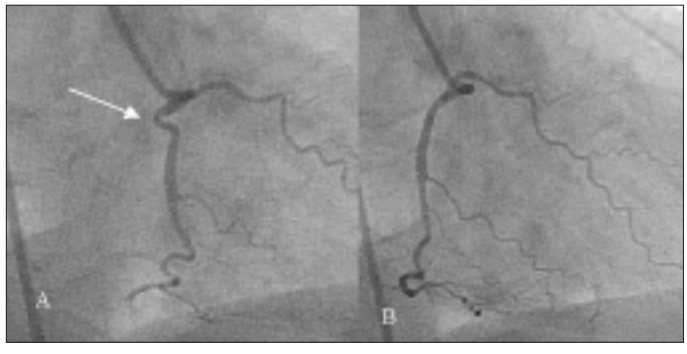

Figure 2. Typical systolic compression (arrow) of the proximal right coronary artery (A). Diastolic lumen dimensions are normal (B).The coronary tree shows no angiographic signs of coronary atherosclerosis.

Address for Correspondence: Dr. Hamza Duygu, Ege University Medical Faculty, Cardiology Department, Bornova, 35100, İzmir-Turkey
Telephone: +902323904001 Fax:+902323903287, e-mail: hamzakard@yahoo.com