

A Rare Localisation of Myocardial Bridge: Case Report

Miyokardiyal Köprüleşmenin Nadir Bir Lokalizasyonu

Kemal KARAAĞAÇ,^a
Özlem ARICAN ÖZLÜK,^a
Fahriye VATANSEVER,^a
Mustafa YILMAZ^a

^aClinic of Cardiology,
Bursa İhtisas Training and
Research Hospital, Bursa

Geliş Tarihi/Received: 21.01.2013
Kabul Tarihi/Accepted: 20.06.2013

Yazışma Adresi/Correspondence:
Kemal KARAAĞAÇ
Bursa İhtisas Training and
Research Hospital,
Clinic of Cardiology, Bursa,
TÜRKİYE/TURKEY
drkaraagac2001@gmail.com

ABSTRACT The coronary arteries are normally localised subepicardially and are visible on the surface of the heart. Myocardial bridge is a band of heart muscle that lies on top of a coronary artery. Myocardial bridge is one of the most common coronary abnormality, which is a benign condition and often asymptomatic. Almost all of myocardial bridges involve in the left anterior descending artery and they are very rarely seen in the other coronary arteries. We report a 38 years-old male patient presenting with stable angina pectoris and his angiography, that was demonstrated of myocardial bridge in the posterior descending branch of the right coronary artery, which cause angina pectoris.

Key Words: Myocardial bridging; angina pectoris; coronary vessels

ÖZET Koroner arterler normalde subepikardiyal yerleşimlidirler ve kalp yüzeyinde görünürler. Miyokardiyal köprüleşme koroner arter üzerinde bir kas bandının uzanmasıdır. Miyokardiyal köprüleşme en sık görülen koroner anormalliklerden biridir, selim bir durumdur ve sıklıkla asemptomatiktir. Hemen hemen tüm miyokardiyal köprüler sol ön inen koroner arterde görülür, diğer koroner arterlerde nadiren görülürler. Bu yazıda 38 yaşındaki erkek hastada angina pectoris nedeni olan sağ koroner arter arka inen daldaki miyokardiyal köprüyü sunduk.

Anahtar Kelimeler: Miyokardiyal köprüleşme; angina pectoris; koroner damarlar

Türkiye Klinikleri J Case Rep 2014;22(2):89-91

Mycocardial bridging occurs when a band of cardiac muscle overlies an intramural segment of a coronary artery, the intramural segment being referred to as a “tunneled” artery.¹ We presented a case of rare localization of myocardial bridge in the right coronary artery in a patient who was admitted with angina pectoris.

CASE REPORT

A 38-year-old man was admitted to our center with exertional chest pain for two weeks. Smoking is the only risk factor for coronary artery disease in our patient. Blood pressure was 140/80 mm Hg and pulse rate was 70 beats/minute. The physical examination was completely normal. Total cholesterol, low density lipoprotein (LDL), cardiac enzymes and troponin-T were also found to be normal. ST segment depression was noted in leads II, III, aVF, V3-V6 on elec-

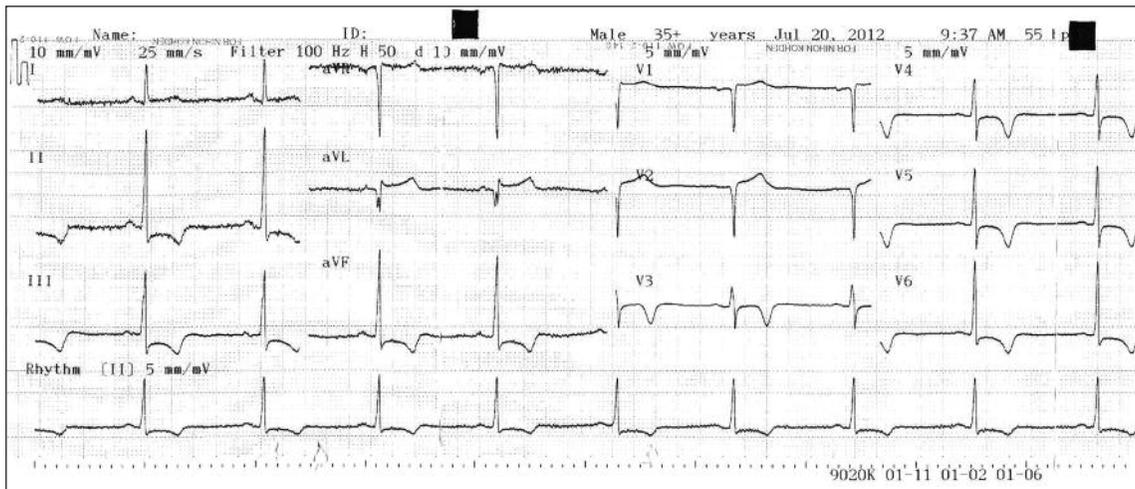


FIGURE 1: Initial 12-lead electrocardiogram. ST-depression in Lead D2, D3, aVF, V2 through V6.

trocardiography (Figure 1). His echocardiogram showed normal wall motion. The patient underwent selective left and right coronary artery angiography. The left coronary angiography revealed free of critical lesion of the left main artery (LM), the left circumflex artery (LCx) and the left anterior descending (LAD) arteries. The right coronary angiography revealed the typical 'milking effect' for myocardial bridge in the right coronary artery (RCA), causing 95% stenosis during systole (Figure 2).

DISCUSSION

Myocardial bridge is usually a harmless pathology.² Myocardial bridge is generally confined to the mid LAD artery; it is less frequently located in the Cx artery, and is occasionally seen in the RCA.³ Myocardial bridges are generally expressed clinically in young adult men, in whom typical or atypical chest pain appears, induced by physical exercise and appearing at rest.⁴

Myocardial bridge have been considered to be a benign condition, but several recent studies have demonstrated that their clinical complications can be dangerous, including ischemia and acute coronary syndromes, coronary spasm, ventricular septal rupture, arrhythmias (including supraventricular tachycardia and ventricular tachycardia), exercise-induced atrioventricular conduction blocks, transient ventricular dysfunction and sudden death.^{1,5-7} Therefore, the progno-

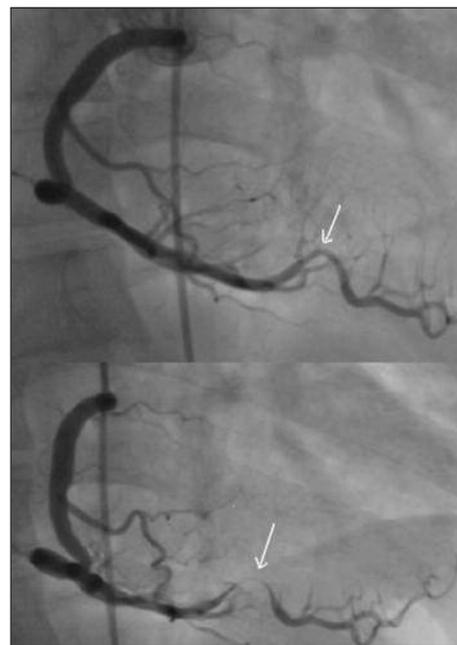


FIGURE 2: Right anterior oblique (RAO) caudal projection. Showing the typical 'milking effect' for myocardial bridge in right coronary artery (RCA), causing 95% stenosis (white arrow).

sis of patients with myocardial bridge is not benign as it was believed to be in the past.

Obviously, medical treatment should be the first and principal strategy. Beta blockers are the suggest treatment of musculer bridge.⁸ Interventions should be limited to patients with refractory angina despite medical therapy.⁹ In our case, medical treatment was decided.

Consequently, clinical suspicion of a myocardial bridge should be considered in all cases of typical or atypical chest pain, particularly in young

patients with a low probability of atherosclerosis who are free from traditional cardiovascular risk factors.

REFERENCES

1. Bourassa MG, Butnaru A, Lespérance J, Tardif JC. Symptomatic myocardial bridges: overview of ischemic mechanisms and current diagnostic and treatment strategies. *J Am Coll Cardiol* 2003;41(3):351-9.
2. Tayyar Ş, Ersoy İ, Altınbaş A. Myocardial bridges at posterolateral coronary artery: Case report. *Türkiye Klinikleri J Cardiovasc Sci* 2012;24(3):322-4.
3. Ripa C, Melatini MC, Olivieri F, Antonicelli R. Myocardial bridging: A 'forgotten' cause of acute coronary syndrome - a case report. *Int J Angiol* 2007;16(3):115-8.
4. Juillière Y, Berder V, Suty-Selton C, Buffet P, Danchin N, Cherrier F. Isolated myocardial bridges with angiographic milking of the left anterior descending coronary artery: a long-term follow-up study. *Am Heart J* 1995;129(4):663-5.
5. Kneale BJ, Stewart AJ, Coltart DJ. A case of myocardial bridging: evaluation using intracoronary ultrasound, Doppler flow measurement, and quantitative coronary angiography. *Heart* 1996;76(4):374-6.
6. Berry JF, von Mering GO, Schmalfuss C, Hill JA, Kerensky RA. Systolic compression of the left anterior descending coronary artery: a case series, review of the literature, and therapeutic options including stenting. *Catheter Cardiovasc Interv* 2002;56(1):58-63.
7. Möhlenkamp S, Hort W, Ge J, Erbel R. Update on myocardial bridging. *Circulation* 2002;106(20):2616-22.
8. Schwarz ER, Klues HG, vom Dahl J, Klein I, Krebs W, Hanrath P. Functional, angiographic and intracoronary Doppler flow characteristics in symptomatic patients with myocardial bridging: effect of short-term intravenous beta-blocker medication. *J Am Coll Cardiol* 1996;27(7):1637-45.
9. Haager PK, Schwarz ER, vom Dahl J, Klues HG, Reffelmann T, Hanrath P. Long term angiographic and clinical follow up in patients with stent implantation for symptomatic myocardial bridging. *Heart* 2000;84(4):403-8.