

# SAĞ SİNÜS VALSALVA DAN KÖKEN ALAN SİRKUMFLEX KORONER ARTERE BAŞARILI PERKUTAN KORONER GİRİŞİM

## Succesfull Percutaneous Coronary Intervention of Circumflex Coronary Artery Originating from the Right Sinus of Valsalva

Şiho HİDAYET<sup>1</sup>, Goncağül BOZ<sup>2</sup>, Ahmet Uğur BOZ<sup>2</sup>, Vahit DEMİR<sup>1</sup>, Yaşar TURAN<sup>1</sup>

### ÖZET

Koronar arter anomalileri koroner anjiyografiye giden hastaların %0,6 -1,5 unda teşhis edilmektedir. Hayatı tehdit eden durumlarla karşılaşabilirler fakat genellikle asemptomatiklerdir. Bu vakada 54 yaşında ki bayan hasta akut yüksek lateral myokard enfarktüsü ile hastaneye başvurdu ve sol sirkumfleks koroner arter çıkış anomalisine sahipti. Biz anormal çıkışlı koroner artere başarılı perkutan girişim işlemi uyguladık.

**Anahtar Kelimeler:** *Sirkumfleks koroner; Koroner anomali; Sağ sinüs valsalva*

### ABSTRACT

Coronary artery anomalies are diagnosed in 0.6 to 1.5% of patients who undergo coronary angiography (CAG). They may present with life threatening conditions but are generally asymptomatic. In this report, a 54-year-old woman was admitted to the hospital with acute high lateral myocardial infarction and had an anomalous origin of the left circumflex coronary artery (LCX). We performed a successful percutaneous coronary intervention with an abnormal output coronary artery.

**Keywords:** *Circumflex coronary; Coronary anomaly; Right sinus of valsalva*

<sup>1</sup>Bozok Üniversitesi, Tıp Fakültesi, Kardiyoloji Anabilim Dalı, Yozgat

<sup>2</sup>Malatya Eğitim ve Araştırma Hastanesi, Kardiyoloji, Malatya

Şiho HİDAYET, Yrd. Doç. Dr.  
Goncağül BOZ, Uzm. Dr,  
Ahmet Uğur BOZ, Uzm. Dr,  
Vahit DEMİR, Yrd. Doç. Dr.  
Yaşar TURAN, Yrd. Doç. Dr.

### İletişim:

Yrd. Doç. Dr. Şiho HİDAYET,  
Bozok Üniversitesi Tıp Fakültesi,  
Kardiyoloji Anabilim Dalı, Yozgat  
Tel: 0530 643 11 43  
e-mail:  
shhidayet@hotmail.com

Geliş tarihi/Received: 19.05.2017  
Kabul tarihi/Accepted: 29.06.2017

Bozok Tıp Derg 2017;7(3):103-5  
Bozok Med J 2017;7(3):103-5

## INTRODUCTION

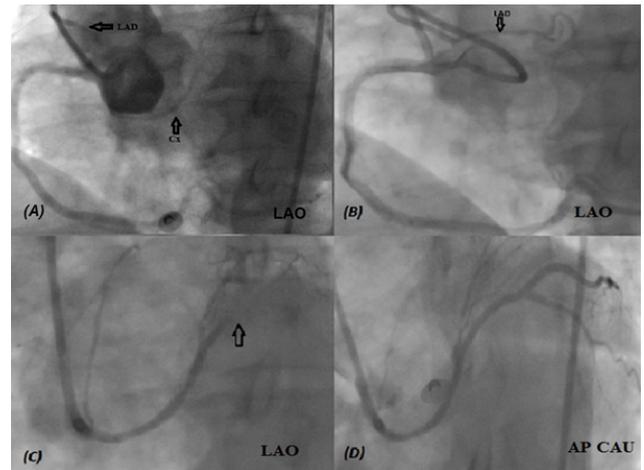
Coronary artery anomalies have been identified in 0.6% to 1.5% of coronary angiograms (1,2). They may present with life threatening conditions but are generally asymptomatic. The most commonly associated with an increased clinical risk, such as syncope, is an ectopic coronary artery arising from an inappropriate sinus of Valsalva and passing through the space between the aorta and pulmonary trunk (3). This report describes the anomalous origin of the circumflex coronary artery (CX) from the right sinus of Valsalva and left anterior descending artery originated from proximal right coronary artery in a 54-year-old woman, which presented as an acute high lateral ST-segment elevation myocardial infarction. We performed percutaneous coronary intervention (PCI) for anomalous coronary artery.

## CASE

A 54-year-old woman presented at the emergency room within 2 h of chest pain. She had no history smoking, hypertension or diabetes. A physical examination showed blood pressure 138/75 mmHg, a heart rate of 86 bpm. The resting electrocardiogram was demonstrating ST-segment elevation in leads I and AvL. Echocardiography showed hypokinesis of the lateral wall of the left ventricle. Troponin I was slightly increased. 300 mg ASA, 600 mg clopidogrel and 100 iu/kg heparin iv bolus were administered to the patient in the emergency department. She was admitted cardiac catheterization unit. Coronary angiography (CAG) was performed from the standard right femoral approach. During catheterization, we were unable to engage the left coronary ostium. After that Right coronary artery (RCA) was viewed by Judkins right 4.0 cm curve diagnostic catheter. An injection in the aortic root showed both coronary arteries were originated from right sinus of Valsalva (RSV) (Figure 1A). The left anterior descending artery (LAD) originated from the proximal part of right coronary artery but Circumflex artery (Cx) was originating separately near the RCA ostia (Figure 1B). CAG showed no critical stenosis in the right coronary artery (RCA) and LAD but %100 thrombotic occlusion on the mid portion of the anomalous Cx artery

was detected ( Figure 1C). Therefore, we planned to do PCI on the occluded lesion.

A 6F Judkins right 4.0 guiding catheter (Launcher, Medtronic, Minneapolis, MN, USA) was used for cannulating the circumflex coronary ostium. Cx total lesion was passed through by 0,014 inch Boston floppy guidewire (Boston Scientific/ Minnesota) and after predilatation by 1.5 mmX15 mm Emerge™ balloon (Boston Scientific/ Minnesota), 2.25 mmX18 mm Endeavor Resolute drug eluting stent (Medtronic) was implanted. Post stent flow showed good Thrombolysis In Myocardial Infarction (TIMI) 3 flow into the distal LCX (Figure 1D). Contrast-induced nephropathy was noted two days after the procedure. However, multislice cardiac tomography could not be withdrawn due to the risk of renal damage. Finally the patient was discharged with medical therapy 4 days after the procedure.



**Figure 1:** (A) An injection in the aortic root showed both coronary arteries were originated from right sinus of Valsalva (RSV) in left oblique projection. (B) The left anterior descending artery (LAD) originated from the proximal part of right coronary artery in left oblique projection. (C) Coronary angiography showed that thrombotic occlusion on the midportion of the anomalous Cx artery in left oblique projection. (D) Post stenting flow showed good Thrombolysis In Myocardial Infarction (TIMI) 3 flow into the distal LCX in antero-posterior caudal projection.

## DISCUSSION

The origin of the LCX from the right sinus of Valsalva or RCA is a relatively common anatomical variation and some cases reported the origin of the LCX from the pulmonary artery (4,5). However, some studies have shown anomalous Cx originating from the right sinus of Valsalva was associated with a higher risk of atherosclerosis (6,7). In addition, myocardial infarction which was associated with anomalous Cx originating from the right sinus of Valsalva and retro-aortic course has been reported in patients undergoing mitral valve surgery (8). Conventional CAG has traditionally been used to diagnose coronary anomalies. Anomalous LCX coronary arteries have a greater degree of stenosis than that in non anomalous arteries in age- and gender-matched control patients (7,9). Right selected catheter for these anomalous arteries helps the operator to complete the procedure quickly, and less fluoroscopy time. In this case, using the right guiding catheter percutaneous coronary intervention was made very comfortable. In conclusion Right guiding catheter may be considered for lesion in the circumflex coronary artery (CX) originated from the right sinus of Valsalva.

## REFERENCES

1. Yamanaka O, Hobbs RE. Coronary artery anomalies in 126,595 patients undergoing coronary arteriography. *Cathet Cardiovasc Diagn* 1990;21:28-40.
2. Wilkins CE, Betancourt B, Mathur VS, Massumi A, De Castro CM, Garcia E, et al. Coronary artery anomalies: A review of more than 10,000 patients from the Clayton Cardiovascular Laboratories. *Tex Heart Inst J* 1988;15:166-73.
3. Levin DC, Fellows KE, Abrams HL. Hemodynamically significant primary anomalies of the coronary arteries. *Circulation* 1978;58:25—34.
4. Lee YS, Lee JB, Kim KS. Anomalous origin of the left circumflex coronary artery from the right sinus of Valsalva identified by imaging with multidetector computed tomography. *Korean Circ J* 2006;36:823-5.
5. Korosoglou G, Ringwald G, Giannitsis E, Katus HA. Anomalous origin of the left circumflex coronary artery from the pulmonary artery: a very rare congenital anomaly in an adult patient diagnosed by cardiovascular magnetic resonance. *J Cardiovasc Magn Reson* 2008;10:4.
6. Click RL, Holmes DR, Jr, Vlietstra RE, Kosinski AS, Kronmal RA. Anomalous coronary arteries: location, degree of atherosclerosis and effect on survival a report from the Coronary Artery Surgery Study. *J Am Coll Cardiol* 1989;13:531-7.
7. Samarendra P1, Kumari S, Hafeez M, Vasavada BC, Sacchi TJ. Anomalous circumflex coronary artery: benign or predisposed to selective atherosclerosis. *Angiology* 2001;52:521-6.
8. Speziale G, Fattouch K, Ruvolo G, Fiorenza G, Papalia U, Marino B. Myocardial infarction caused by compression of anomalous circumflex coronary artery after mitral valve replacement. *Minerva Cardioangiol* 1998;46:455-6.
9. Patel S. Normal and anomalous anatomy of the coronary arteries. *Semin Roentgenol.* 2008;43:100–12.