

A case of twin circumflex arteries associated with acute myocardial infarction

Dual circumflex artery with an interarterial course

Dear Editor,

I read with interest the case report by Karabay et al.^[1] published in the October 2010 issue of this journal. A case of twin circumflex (Cx) arteries associated with acute myocardial infarction was presented by the authors. I congratulate the authors for presenting this very rare anomaly. Yet, I have some criticism about the presented case.

In a general overview, congenital coronary artery anomalies (CCAA) are rare and usually incidental findings during diagnostic coronary angiography. In large series, the incidence of CCAA ranges from 0.6% to 1.3%.^[2,3] Anomalous origin of the Cx artery from the right coronary artery or right sinus of Valsalva is the second most common CCAA in reported angiographic series.^[2] Although anomalous origin of the Cx artery is usually benign, several cases of sudden death, myocardial infarction, or angina pectoris without atherosclerotic lesions have been reported.^[4-6] In most of the cases with anomalous origin of the Cx artery, the initial course of the anomalous artery lies posterior to the aorta.^[7] Anomalous origin of the right or left coronary artery from the contralateral coronary sinus of Valsalva is associated with sudden cardiac death, especially during or following a strenuous activity. In these anomalies, in addition to interarterial proximal course, the presence of a slit-like coronary ostium, acute angle vessel take-off, intramural aortic segment have been attributed to sudden cardiac death.^[8] During or following a strenuous activity, compression to an anomalous coronary artery between the aorta and pulmonary trunk could be more prominent. In the presented case, a striking finding was the interarterial course of the anomalous Cx artery, as documented by computed tomography. An intramural aortic segment in the presented case could have been defined by aid of cardiac computed tomography. An intravascular ultrasound study could also be helpful for getting cross-sectional luminal images of the anomalous Cx artery. Differentiation of an atherosclerotic stenosis or hypoplasia of the intramural segment in an interarterial course may be impossible by conventional coronary angiography.

It is believed that the risk for sudden cardiac death related to a CCAA is low in older ages. However, the magnitude of the risk is not clear in older ages. In the presented case, the age of the patient was 50 years. Based on the coronary

angiographic view in Figure 1b, the lesion in the proximal segment of the anomalous Cx artery was reported to be significant by the authors. In a patient aged 50 years, in the absence of objective evidence for severe ischemia, direct stenting of an interarterial segment of an anomalous coronary artery is debatable. Today, supporting information is lacking on stenting an interarterial segment of a CCAA. Phasic compressions to an implanted stent in the interarterial segment may result in a crushed stent. There have been a few reports about stenting an interarterial segment of a CCAA and most of them were performed in acute clinical settings such as acute coronary syndromes. In the presented case, medical treatment and follow-up of the lesion in the anomalous Cx artery might have been more appropriate.

Abdullah Uluçay, M.D.

Defne Hospital, Antakya, Hatay
e-mail: ulucaytr@hotmail.com

Conflict-of-interest issues regarding the authorship or article:
None declared

1. Karabay KO, Uysal E, Bağirtan B, Vural M. A case of twin circumflex arteries associated with acute myocardial infarction. *Türk Kardiyol Dern Arş* 2010;38:496-8.
2. Yamanaka O, Hobbs RE. Coronary artery anomalies in 126,595 patients undergoing coronary arteriography. *Cathet Cardiovasc Diagn* 1990;21:28-40.
3. Kimbiris D, Iskandrian AS, Segal BL, Bemis CE. Anomalous aortic origin of coronary arteries. *Circulation* 1978;58:606-15.
4. Taylor AJ, Byers JP, Cheitlin MD, Virmani R. Anomalous right or left coronary artery from the contralateral coronary sinus: "high-risk" abnormalities in the initial coronary artery course and heterogeneous clinical outcomes. *Am Heart J* 1997;133:428-35.
5. Piovesana P, Corrado D, Verlato R, Lafisca N, Mantovani E, DiMarco A, et al. Morbidity associated with anomalous origin of the left circumflex coronary artery from the right aortic sinus. *Am J Cardiol* 1989;63:762-3.
6. Aydın M, Özeren A, Peksoy I, Çabuk M, Bilge M, Dursun A, et al. Myocardial Ischemia caused by a coronary anomaly: left circumflex coronary artery arising from right sinus of Valsalva. *Tex Heart Inst J* 2004;31:273-5.
7. 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.
8. Brothers JA, Stephens P, Gaynor JW, Lorber R, Vricella LA, Paridon SM. Anomalous aortic origin of a coronary artery with an interarterial course: should family screening be routine? *J Am Coll Cardiol* 2008;51:2062-4.