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Is it possible to have a role of coronary artery course anomaly in the pathogenesis of atherosclerotic lesions?

Koroner arter seyir anomalisinin aterosklerotik lezyonların patogenezinde bir rolü olabilir mi?

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Congenital anomalies of coronary arteries are rare and clinical suspicion remains important challenge in diagnosis.[1] The relationship between coronary anomalies and atherosclerotic diseases is not clear in the literature.[1,2] Our case had coronary artery stenosis which was in very low risk group for atherosclerosis; therefore, coronary artery course anomaly was the most explanatory possibility regarding the pathogenesis.

A 22-year-old female patient was admitted to our hospital with complaints of chest pain and non-specific effort syncope for three months. Transthoracic echocardiography revealed normal left ventricular size and contractility. Due to her ongoing symptoms, computed tomography coronary angiography was performed which revealed right coronary artery (RCA) originating from the left coronary sinus and, then, coursing between the great arteries for 1.5 cm. Left coronary artery was also originating from the left sinus Valsalva with a separate ostium (Figure 1). Computed tomography angiography also showed 50% stenosis in the RCA and proximal compression by pulmonary artery (Figure 2). Conventional coronary angiography revealed severe proximal RCA stenosis (Figure 3). After a written informed consent was obtained from the patient, surgery was planned and right internal mammary artery was anastomosed to the RCA under cardiopulmonary bypass. After the operation, rapid recovery was seen without any chest pain at one-year clinical follow-up.

An abnormal origin and course anomaly has been defined in 0.27 to 1.66% of patients undergoing coronary angiography with a rate of 0.6%, as reported by autopsy series.[3] As in our case, right coronary artery anomalies are extremely rare. Coronary artery

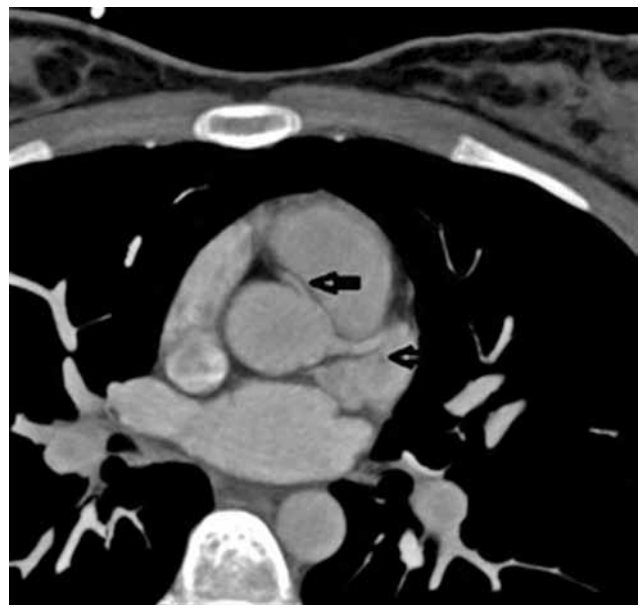

Figure 1. A computed tomography angiography image showing separate ostiums of the right and left coronary arteries.

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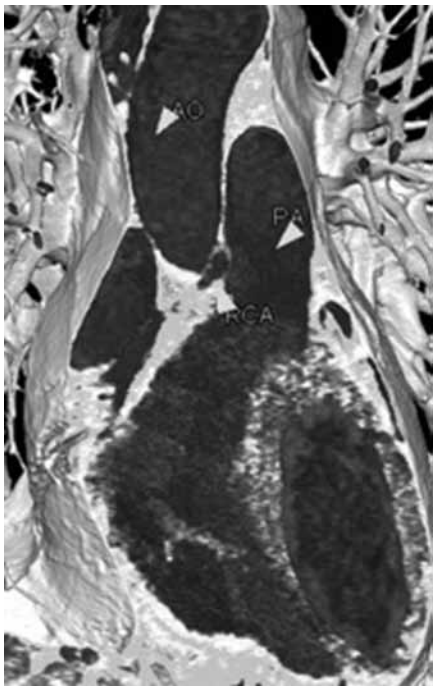

Figure 2. A computed tomography angiography image showing proxymal compression of the right coronary artery.

atherosclerosis due to coronary course anomaly is still a controversial issue.[4] In the pathophysiology of myocardial ischemia caused by anomalies, coronary compression during exercise or abnormal angle of coronary origin is considered to be responsible. In conclusion, coronary course anomalies may cause severe atherosclerotic disease by the compression of great vessels which inevitably treated by coronary artery bypass grafting.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

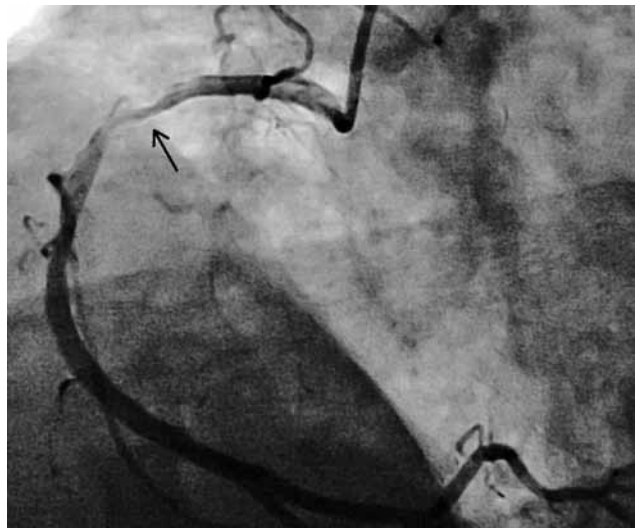

Figure 3. A conventional angiography image of the right coronary artery showing severe proxymal stenosis.

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