

Left circumflex coronary artery arising as a terminal extension of right coronary artery in a patient treated with coronary artery bypass grefting

Koroner arter bypass uygulanan sol sirkumfleks arterin, sağ koroner arterin bir devamı şeklinde uzanması

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Coronary artery anomalies are noted while doing coronary angiograms with an incidence of 1-1.5%. Most of them are benign and observed as a coronary artery originating from the contralateral aortic sinus. Coronary artery anomalies are more often in patients with congenital heart disease and its identification is of vital importance preoperatively. It is presented a very rare case of coronary anomaly where circumflex coronary artery is a terminal extension of right coronary artery.

Key words: Coronary angiography; coronary vessel anomalies/radiography.

Coronary artery anomalies are found on 1.0-1.5% of coronary angiograms. Of these, 90% are abnormalities in the origin or distribution of a coronary artery and 10% are abnormal fistulas. Coronary anomalies are classified as benign or clinically significant. The most common benign anomaly is separate ostia of left anterior descending and circumflex arteries- 0.4-1%. The most common clinically significant coronary anomaly is a coronary artery that originates from the contralateral aortic sinus.^[1] There may be no circumflex artery. In this condition, a superdominant right coronary artery supplies the entire left atrioventricular groove and left posterolateral wall.^[1] Left circumflex coronary artery arising as a terminal extension of right coronary artery is a very rare coronary anomaly. We represent such a coronary anomaly in a patient who underwent coronary angiography for high risk unstable angina pectoris.

CASE REPORT

A 60-years-old male patient was admitted to our center with acute chest pain during rest. His ECG revealed ST

Koroner arter çıkış anomalileri koroner anjiyografi laboratuvarlarında %1-1.15 oranında izlenmektedir. Bu koroner arter anomalilerinin çoğu zararsızdır ve genellikle karşı koroner sinüsten çıkış şeklindedir. Koroner arter anomalileri daha çok doğuştan kalp hastalığı olanlarda görülür ve cerrahi tedavi öncesi tanınması hayati önem taşır. Bu yazıda sol sirkumfleks arterin, sağ koroner arterin bir terminal uzantısı olarak çıktığı nadir nadir görülen bir olgu sunuldu.

Anahtar sözcükler: Koroner anjiyografi; koroner damar anomali-si/radyografi.

segment depression in leads V1 to V6. Except for advanced age, he had no coronary risk factor. As he had elevated troponin T values during follow-up, he underwent coronary angiography with a final diagnosis of high risk unstable angina pectoris.

His coronary angiography revealed 60% left main coronary artery stenosis, 90% proximal and 50% mid left anterior descending coronary artery stenosis. Left circumflex coronary artery was absent in left coronary system, instead he had two well developed high lateral (ramus intermediate) arteries one of which had 70% stenosis (Fig. 1a). He had a dominant right coronary artery with no coronary lesions. Interestingly circumflex artery was arising as a terminal extension of posterolateral branch of right coronary artery (Fig. 1b-d). The patient was urgently treated with coronary artery bypass grefting.

DISCUSSION

Coronary anomalies may be benign or clinically significant as it is in our case. Absence of left circumflex artery

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is a very rare congenital coronary anomaly. In a large study, the incidence was found to be 0.003% in 126595 coronary angiograms.^[2] In this condition, lateral and posterior aspects of left ventricle are supplied by a superdominant right coronary artery of a large diagonal artery and a long right coronary artery continuing along the atrioventricular groove.^[1,2] There is only one case in the literature with absence of left circumflex coronary artery who presented with myocardial infarction. This patient had no coronary risk factors and no angiographic coronary artery disease.^[3] In this particular case, the patient had a superdominant right coronary artery with aneurysmatic regions in the proximal regions, circumflex coronary artery arising as a terminal extension of right coronary artery and a myocardial bridge over the first diagonal branch of left anterior descending coronary artery.

In patients with coronary artery disease, if left circumflex artery can not be visualized during coronary angiography, either an ostial total occlusion or congenital agenesis may be suspected. Arising anomalies of left circumflex artery are diagnosed when left circumflex artery is not visualized during left coronary injection in the absence of proximal occlusion and at the same time ostium of circumflex artery should be visualized separately from right sinus valsalva or as an extension of right coronary artery.^[4,5] Angiographic recognition of coronary artery anomalies prior to surgery is of great importance. The cardiac surgeon must be aware of the abnormal anatomy in order to avoid accidental ligation or transection at the time of surgery. We presented an extremely rare congenital coronary anomaly.

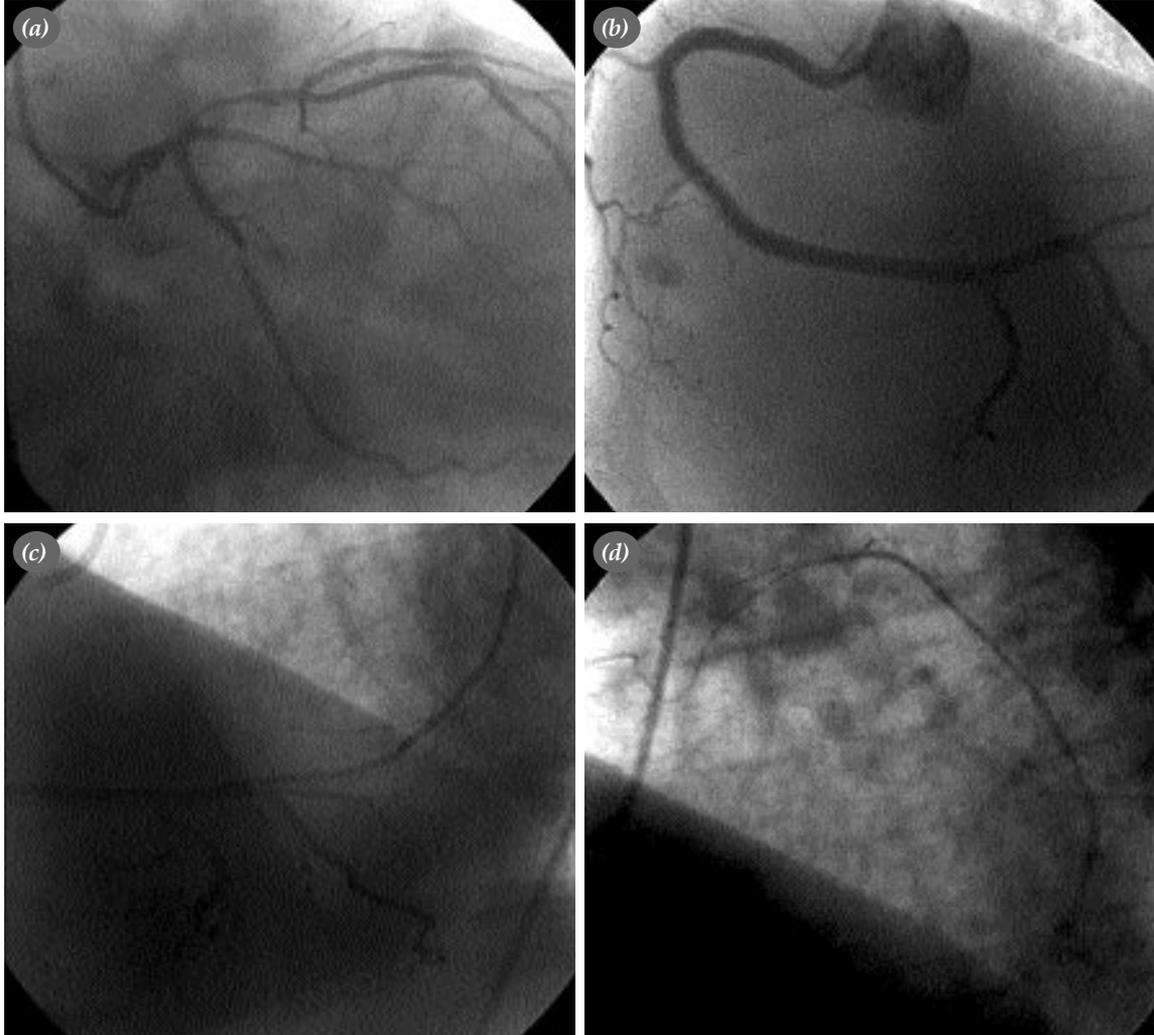


Fig. 1. (a) Left circumflex artery (Cx) was absent in left coronary system, instead he had two well developed high lateral (ramus intermedius) arteries one of which had 70% stenosis. (b) Dominant right coronary artery with no coronary lesions. (c) LAO 45° Cx was arising as a terminal extension of posterolateral branch of right coronary artery. (d) LAO 45° Cx was arising as a terminal extension of posterolateral branch of right coronary artery.

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