Single coronary artery diagnosed by multidetector computed tomography

Çok kesitli bilgisayarlı tomografi ile tani konulan tek koroner arter

The coronary circulation originating from a single coronary ostium is a rare variation. These variations were classified according to the site of the origin and distribution patterns of the coronary arteries. We describe Type II B 4 pattern in this case. The left main coronary artery (LMCA) arose from the proximal right coronary artery and coursed to the left side anterior to the right ventricle. It gave the left anterior descending artery (LAD) coursing to the interventricular groove and left circumflex artery (CxA) coursing to the left atrioventricular groove.

A 40-year-old male presented with atypical chest pain for six months. His physical examination, laboratory results, chest X-ray, and electrocardiogram were normal. A multidetector computed tomography coronary angiography (MDCT-CA) was performed to evaluate the coronary vessels. The MDCT-CA showed a single large coronary artery originating from right sinus of Valsalva (Fig. 1, Video 1. See corresponding video/images at www.anakarder.com) and the left main coronary artery arising from proximal right coronary artery. After traversing in front of the right ventricular outflow tract, LMCA gave the origin to the LAD and CxA. There was no vessel originating from the left coronary cusp (Fig. 2). Stenosis was not observed in any part of the coronary tree. No further associated congenital heart anomaly was present.

The incidence of isolated single coronary artery in angiographic series is 0.024%. It has a little clinical significance, except for cases in which a coronary artery traverses between the aorta and the pulmonary artery. Identification of retro pulmonary position of an arterial segment is important, since mechanical compression of such a vessel between the aorta and the pulmonary artery may be a potential cause of ischemia and sudden cardiac death. The anomaly of this case has no clinical significance of this kind.

Until now, the main diagnostic method for detection of coronary anomalies has been coronary angiography which has some limitations. It is an invasive procedure and only selectively visualizes one vessel tree at a time and cannot obtain information on the 3-dimensional (3D) course of the vessel. Novel advances on computed tomography technology offer a noninvasive and accurate diagnostic modality to visualize the origin and course of anomalous coronary arteries in a 3D fashion.

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Coronary artery evaluation in Kawasaki disease by dual source multi-detector CT coronary angiography in children

Çocuk yaşta Kawasaki hastalarında “dual source” multi dedektör BT anjiyografi ile koroner arter değerlendirilmesi

Kawasaki disease is a childhood vasculitis of medium-sized vessels, affecting the coronary arteries in particular. Assessment of the degree of coronary stenosis and serial evaluation of coronary artery pathologies are essential for risk stratification and therapeutic management. Invasive coronary angiography is considered to be the gold standard technique. Multi-detector computed tomography coronary angiography (CTCA) is a noninvasive alternative imaging modality. It can also provide complementary morphologic data to echocardiography.

The CTCA is an approved noninvasive technique in the diagnosis of coronary pathologies. Dual source CTCA is a new generation device that can acquire diagnostic images in patients with high heart rates and/or arrhythmias without the use of beta blockers. This is advantageous for pediatric patients whose heart rates are generally higher than the average adult groups.

A 4-year old boy with 7 months’ history of Kawasaki disease was admitted to the hospital for CTCA. In the previous echocardiographic examination 2 coronary aneurysms were detected in left main coronary artery (LMCA) and right coronary artery (RCA).

The CTCA was performed with a dual source (2x64 detector system) CT scanner during free breathing and injection of 40 mL of intravenous...
contrast material. The average heart rate during the scan was 95 beats/min. No beta blocker was administered. Multiple planar reconstruction images showed three aneurysms; one in the distal LMCA, one in the mid-distant left anterior descending artery and the other one in the mid RCA (Fig. 1-4, Video 1. See corresponding video/movie images at www.anakarder.com). There was a striking fibrointimal proliferation in the RCA aneurysm causing luminal stenosis (Fig. 1, 2). No pericardial, myocardial or endocardial pathology was detected.

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An interesting case of coronary artery fistula: diagonal artery-, left circumflex artery-and right coronary artery to left ventricle fistulas

Ilk kez 1865 yılında Krauze tarafından tanımlanan ve sıkılık %0.13 olarak bildirilen koroner arter fistülleri, koroner arterler ile kalp boşluk- lar, büyük damarlar (pulmoner arter, bronşiyal arter) veya diğer vasküler yapılar (mediyastinal damarlar, koroner sinüs) arasındaki anormal bağlantılardır.

Koroner arter fistüllerin yaklaşık %50’inin sağ koroner arterden, %42’sinin sol koroner arterden, %5’in her iki koroner arterden kaynaklandığı, en sık sağ ventriküle (%41), sağ atriyuma (%28) ve pulmoner artere (%17), seyrek olarak da koroner sinüse (%7), sol atriyuma (%5) ve sol ventriküle (%3) açıldığı bildirilmiştir. Yapılmış literatür taramasında aynı hastada üç koroner arterden sol ventriküle fistül hiç bildirilmemiştir.

Hipertansiyon ve diyabetes mellitus nedeni ile takipte olan 76 yaşında bayan hasta, stabil angina pektoris nedeniyle kliniğimize başvurdu. Fizik muayenede arteryel kan basıncı 130/80 mm Hg, nabiz sayısı 72 atım/dakika, düzenli idi. Apekste ve sol 3.-4. interkostal aralığa 2/6 şiddetinde devamlı üfürüm tespit edildi. Diğer sistem muayenelerinde anormal bir bulguya rastlanmadı. Laboratuar değerlendirmelerinde, telekardiyoğrafide ve ekokardiyoğrafide anormal bulgu saptanmadı. Elektrokardiyoğrafide sinüs ritmi, V 4-6 derivasyonlarında ST depresyonu izlendi. Efor testi pozitif bulunması üzerine yapılan koroner anjiyografide diyagonal