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A superdominant left anterior descending coronary artery

Süperdominant sol ön inen arter

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A 57-year-old male patient was admitted to our cardiology outpatient with a complaint of chest pain. He also suffered from type 2 diabetes and non-regular hypertension. His physical examination revealed a heart rate of 82 bpm and a blood pressure of 155/88 mmHg with normal findings. Laboratory test results were also normal. We performed exercise stress test and detected 1.5 mm horizontal ST segment depression in the inferior lead. Using coronary angiogram with transfemoral route, we detected a long, superdominant left anterior descending (LAD) coronary artery continuing on the posterior interventricular groove as the posterior descending artery (PDA) after apex in the right cranial oblique view (Figure 1a). Left anterior descending coronary artery and circumflex (Cx) coronary artery were normal in the left caudal oblique view (Figure 1b). In the left cranial oblique view, LAD continued along the posterior interventricular groove, reaching to crux, after the crux LAD continued as the posterior left ventricular branch (Figure 1c). The right coronary artery (RCA) was nondominant and diminutive (Figure 1d). There was no lesion in any coronary arteries, and the patient was discharged from the hospital.

Coronary artery anomalies have an incidence varying from 0.3 to 1.3% based on autopsy and angiographic series.[1] In general, the posteroinferior part of the interventricular septum is supplied by the PDA whose variable origin is reflected by the concept of coronary dominance. The PDA can arise from the RCA in a pattern of right dominance (85% of patients) and codominance (7% of patients), or from the Cx artery in a pattern of left dominance (8% of patients).[2] An extremely rare form of the left dominant coronary circulation reported in the literature is the continuation of LAD around the apex into the posterior interventricular sulcus as the PDA supplying most of the interventricular septum. Herein, we report a case of anomalous origin of PDA as the continuation of superdominant LAD in the presence of a nondominant RCA.

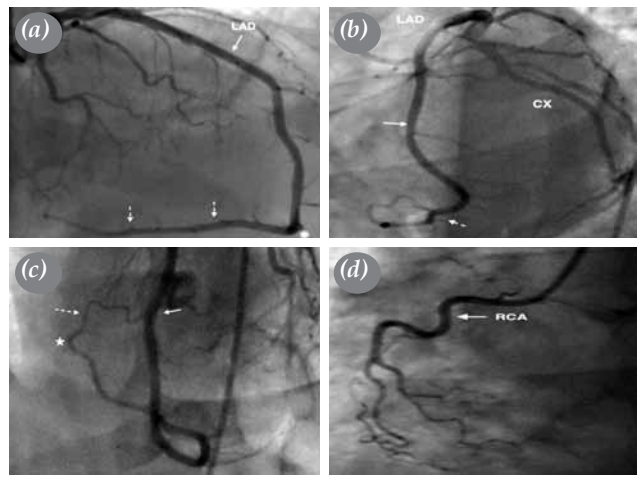

Figure 1. (a) The LAD (arrow) continues on the posterior interventricular groove as a PDA (dotted arrow) after apex (asterisk) in the right cranial oblique view. **(b)** The LAD (arrow) continues on the posterior interventricular groove as the PDA (dotted arrow), and nondominant Cx artery is normal in the left caudal oblique view. **(c)** The LAD continues along the anterior and posterior interventricular groove and reaches to crux (asterisk), after the crux-LAD continues as the posterior left ventricular branch (dotted arrow) in the left cranial oblique view. **(d)** The RCA was non-dominant and diminutive.

LAD: Left anterior descending; PDA: Posterior descending artery; Cx: Circumflex; RCA: Right coronary artery.

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