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Case Report

Congenital absence of the left circumflex coronary artery and an unusually dominant course of the right coronary artery

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Summary

Congenital absence of the left circumflex artery (LCX) is a very rare congenital anomaly of the coronary circulation, and only a few cases have been reported in the literature. We report on a 55-year-old female with atypical chest pain. Routine coronary angiography showed a normal left anterior descending coronary artery (LAD), no LCX and a dominant right coronary artery (RCA), which continued beyond the crux, running the full course of the LCX and terminating in the left atrial branch. Neither aortography nor pulmonary angiography showed a separate ostium for the LCX. There were no atherosclerotic lesions in the coronary arteries, or ischaemia on stress myocardial perfusion imaging. Multi-detector row computed tomography (MDCT) was performed to confirm the diagnosis.

Keywords: angiography, coronary heart disease, coronary vessels

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Various coronary artery anomalies have been described in the literature, with a range of occurrence from 0.6 to 1.3%, and mostly diagnosed incidentally.¹ Congenital absence of the left circumflex coronary artery (LCX) is an extremely rare condition, and only a few cases have been reported.^{2–16} We report on a patient with atypical symptoms, an absent LCX and super-dominant right coronary artery (RCA).

Case report

A 55-year-old female with atypical chest pain for the previous two years was admitted to our hospital. She had had type 2 diabetes for 10 years. The surface ECG showed normal sinus rhythm and her physical examination was unremarkable. Chest X-ray and two-dimensional echocardiography were normal.

She underwent elective coronary angiography with a standard right femoral approach. The left coronary angiogram showed only the left anterior descending coronary artery (LAD) arising from the left sinus of Valsalva and no LCX was seen with a left injection (Fig. 1a–c). The right coronary artery (RCA) originated normally from the right sinus of Valsalva. It had a normal course and continued beyond the crux through the left atrio-ventricular sulcus, running the full course of the LCX and terminating in the left atrial branch (Fig. 1d). Neither aortography nor pulmonary angiography showed a separate ostium for the LCX. The RCA supplied blood to the posterolateral and lateral walls of the left ventricle, so it was considered a super-dominant RCA. There was no stenosis in either the LAD or RCA.

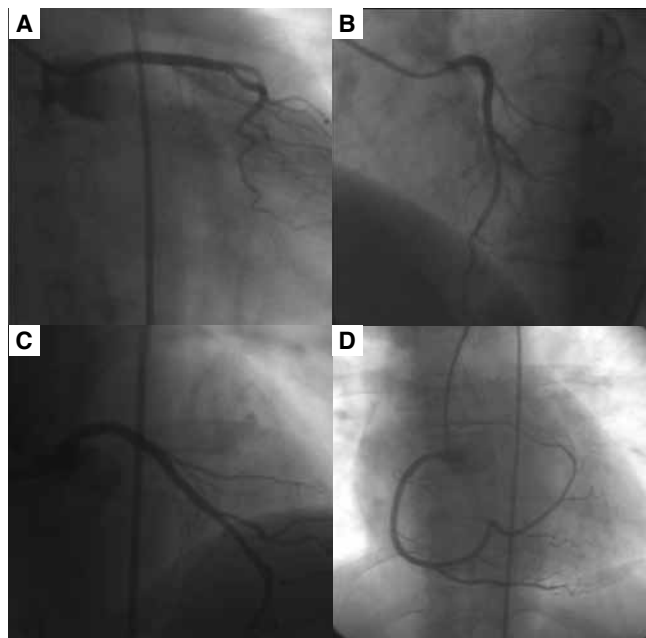



Fig. 1. The left circumflex artery is not seen in various views in conventional coronary arteriography. (A) The left circumflex artery is absent in this view (LAO 0°, caudal 20°). Note that the contrast in the left sinus of Valsalva does not indicate another possible ostium of the circumflex artery. (B) In this view the left anterior descending artery is clearly visualised (LAO 40°, cranial 20°). (C) This view is taken from LAO 0° and cranial 40°. Again only the left anterior descending artery is seen. (D) The right coronary artery continues in the posterior atrio-ventricular groove and terminates in the left atrial branch. The super-dominant right coronary artery (LAO 0° cranial 0°). LAO: left anterior oblique.

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