

Double Origin of the Anterior Descending Coronary Artery: Value of Coronary Computed Tomography Angiography

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A 49-year-old patient was admitted to the emergency room with an atypical chest pain. He reported dyslipidemia and smoking. Physical examination was normal. Electrocardiography and myocardial necrosis markers were normal. Coronary CT angiography has been proven to be safe and effective in stratifying chest pain,¹ especially in patients with intermediate risk, as described in guideline.² Considering this aspect, we opted for noninvasive evaluation.

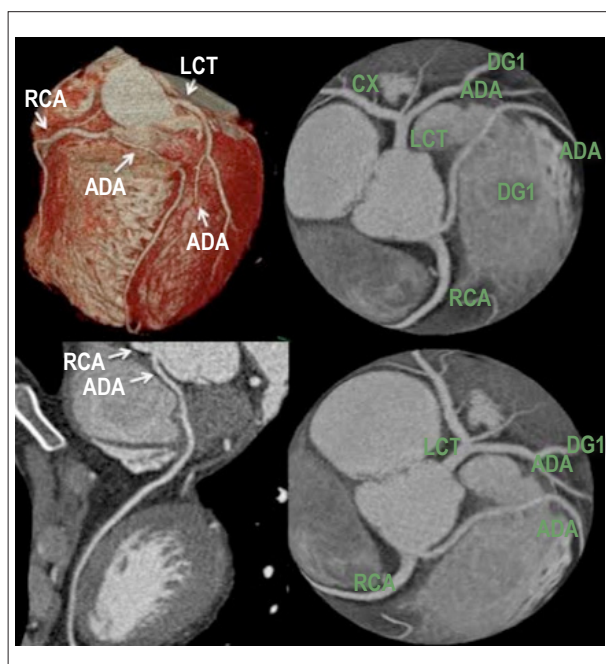


Figure 1 – 3D multiplanar reformatting of image data, showing the long branch of the anterior descending artery originating from the right sinus of Valsalva and taking the usual course in the anterior interventricular groove. LCT: left coronary trunk; ADA: anterior descending artery; DG1: first diagonal artery; CX: circumflex artery; RCA: right coronary artery.

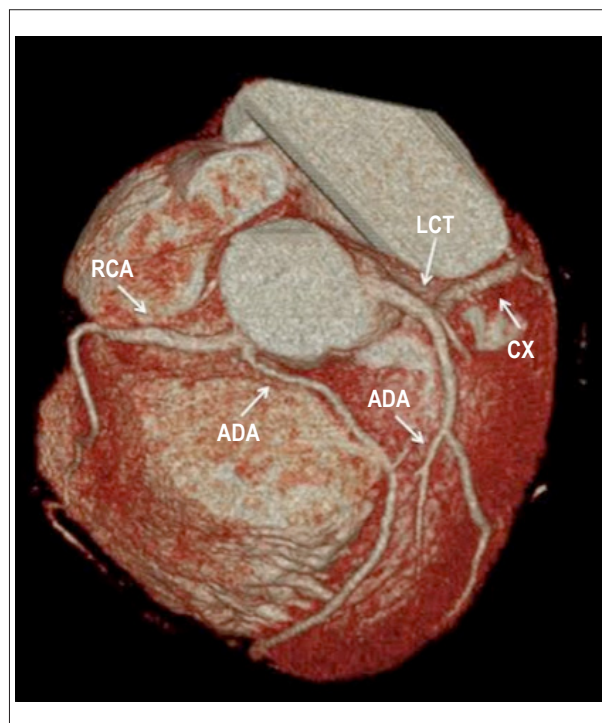


Figure 2 – 3D multiplanar reformatting of image with double origin of the anterior descending coronary artery. The long branch, originating from the right sinus of Valsalva, courses between the right ventricular outflow tract (just below the pulmonary valve) and the aorta. LCT: left coronary trunk; ADA: anterior descending artery; CX: circumflex artery; RCA: right coronary artery.

No coronary disease was detected. However, the double origin of the anterior descending artery (ADA), with the long branch originating from the right sinus of Valsalva, and short branch originating from the left coronary trunk, was observed. This anatomical variation was described by Spindola-Franco et al.³ as type IV dual anterior descending coronary artery, with an incidence of around 0.05%,⁴ characterized as an extremely rare congenital coronary anomaly.

Keywords

Angina Pectoris; Congenital Heart Defects; Sinus of Valsalva; Truncus Arteriosus.

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Research creation and design: Macedo TA, Prazeres CEE, Barros e Silva PGM, Lopes BBC, Baptista LPS; Data acquisition: Macedo TA, Prazeres CEE, Barros e Silva PGM, Lopes BBC, Baptista LPS; Data analysis and interpretation: Macedo TA, Prazeres CEE; Manuscript writing: Macedo TA, Prazeres

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CEE; Revision of the manuscript's major intellectual content: Macedo TA, Prazeres CEE.

Potential Conflicts of Interest

No relevant conflicts of interest.

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Academic Association

This study is not associated to any graduate programs.

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