

Reply to Letter to the Editor: "Reevaluating the Case of an Allegedly Absent Circumflex Artery: A Detailed Analysis of Ince et al.'s Report"

To the Editor,

We appreciate the authors¹ interest in our article entitled "Congenital absence of the left circumflex artery in a patient presenting with acute inferior myocardial infarction."² The authors claim that a small left circumflex artery (LCX) is present, originating from a proximal part of the left main coronary artery (LMCA), and the right coronary artery (RCA) seems to end after supplying the posterior wall of the left ventricle. When we checked coronary multislice computerized tomography images, the first branch of LMCA was the diagonal branch of the left anterior descending (Figure 1). The congenital absence of LCX is a very rare anomaly with an incidence of 0.0067%.³ A superdominant right coronary artery (RCA) and sometimes a large diagonal branch supply the inferior, lateral, and posterior walls of the left ventricle in the absence of LCX.⁴ A very large-sized and dominant RCA courses through the left atrioventricular groove and gives branches that supply the posterolateral site of the left ventricle in our case, in concordance with current literature, as shown in Figure 2. Similar cases were presented by Rawala et al⁵ (Figure 3) and Hong et al⁶ (Figures 4 and 5).

Additionally, the authors noted that the length of the LMCA in our case is abnormally long, and the circumflex artery is similar to that reported by Khurana et al⁷ In that case report, 19.2 mm of LMCA length was defined as unusually long. Also, in a study, the mean length of LMCA was reported to be 9.5 mm, and the maximum length was 32 mm.⁸ But in our case, the LMCA length was 36 mm, which is much longer than the maximum length reported in the previously mentioned case report and the study.

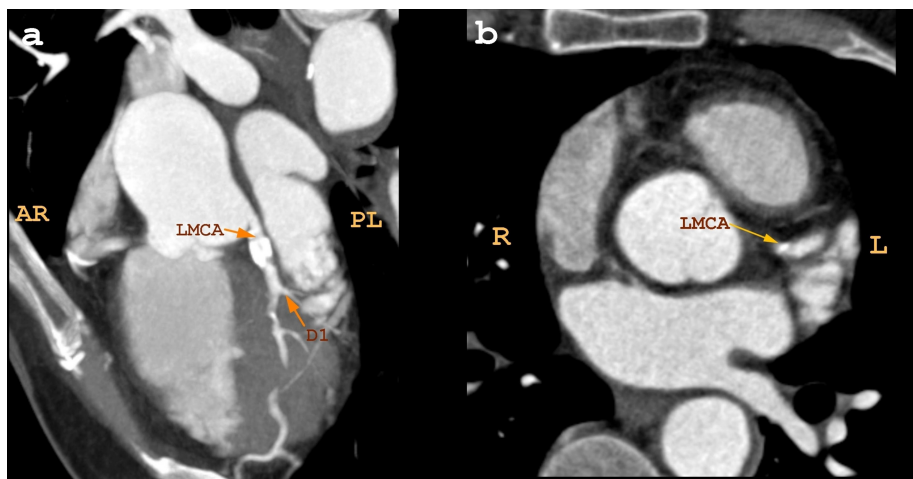


Figure 1. Multidetector computed tomography shows the absence of the left circumflex artery.

LETTER TO THE EDITOR REPLY

Orhan Ince¹
Kamil Gülşen²
Sevil Tuğrul¹
İrfan Şahin¹
Ertuğrul Okuyan¹

¹Department of Cardiology, Health and Science University, Bağcılar Training and Research Hospital, İstanbul, Türkiye

²Department of Cardiology, Health and Science University, Kartal Koşuyolu Training and Research Hospital, İstanbul, Türkiye

Corresponding author:

Orhan Ince
✉ drorhanince@gmail.com

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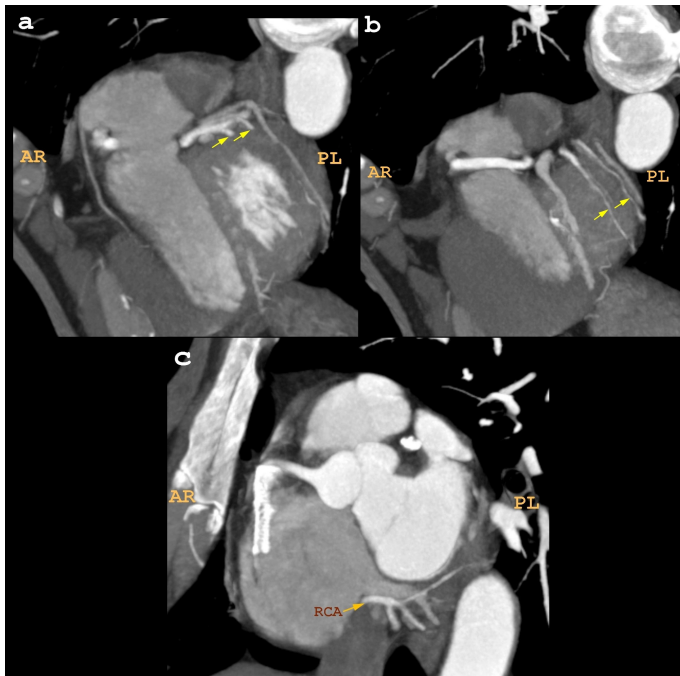


Figure 2. Right coronary artery courses through the left atrioventricular groove and gives branches that supply the posterolateral site of the left ventricle (yellow arrows).

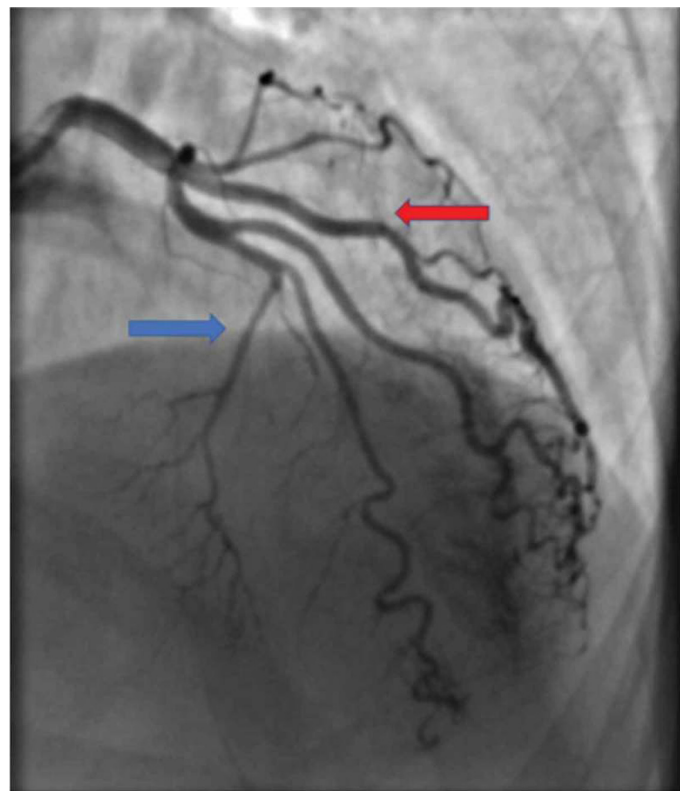


Figure 3. Invasive angiogram identifying left anterior descending artery with septal (blue arrow) and diagonal (red arrow) branches.

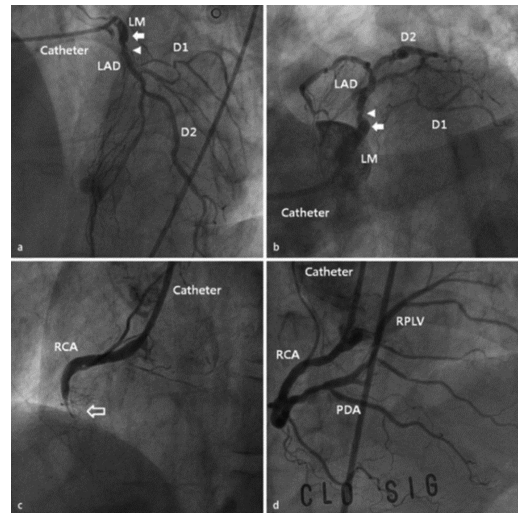


Figure 4. Coronary angiography findings suggest absence of the left circumflex coronary artery (arrow) and focal significant stenosis with calcification at the ostium of the left anterior descending coronary artery (LAD; arrowhead; A, B). Coronary angiography reveals thrombotic total occlusion of the proximal right coronary artery (arrow; C). The RCA has good distal flow after primary percutaneous coronary intervention and supplies the lateral and posterior aspects of the left ventricle (D). (A) Left anterior oblique cranial view; (B) left anterior oblique caudal view; (C) left anterior oblique view; and (D) anteroposterior cranial view. LM, left main coronary artery; D1, first diagonal branch of the LAD; D2, second diagonal branch of the LAD.

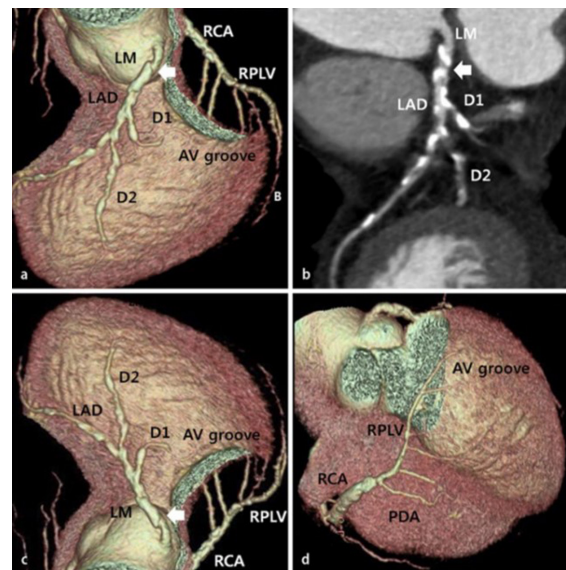


Figure 5. Multidetector computed tomography demonstrating the absence of the left circumflex artery (arrow) as seen on coronary angiography images. (A, C) The first diagonal branch (D1) of the left anterior descending coronary artery (LAD) partially courses to the atrioventricular (AV) groove. (A, C) The right posterolateral ventricular branch (RPLV) arising from the right coronary artery (RCA) extends leftward, crossing the AV groove. (D) LM, left main coronary artery; D2, second diagonal branch of the LAD; PDA, posterior descending branch of the RCA.

The absence of LCX is a challenging diagnosis; it may be misdiagnosed as a complete occlusion of LCX. The diagnosis should be strengthened with multimodality imaging such as conventional coronary angiography and coronary CT angiography.

Declaration of Interests: The authors have no conflicts of interest to declare.

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