



# Coronary Conundrum: Anomalous Pan-Coronary Origin from the Right Sinus with a “Type X” Dual LAD

MULTIMODALITY  
MUSEUM IMAGE

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## ABSTRACT

A 49-year-old man presented with acute onset chest pain and new-onset right bundle branch block. Echocardiography revealed mild apical hypokinesia with an ejection fraction of 45%. Coronary angiography showed all three major coronary arteries originating from the right coronary sinus with normal flow. Further evaluation identified an obstructed accessory left anterior descending (LAD) artery arising from the left sinus. Successful wire crossing, balloon dilatation, and deployment of a drug-eluting stent restored TIMI 3 flow. Subsequent computed tomography angiography confirmed a rare Type X dual LAD anatomy. This case highlights the importance of recognizing uncommon coronary artery anomalies since they may significantly influence diagnostic and therapeutic strategies.

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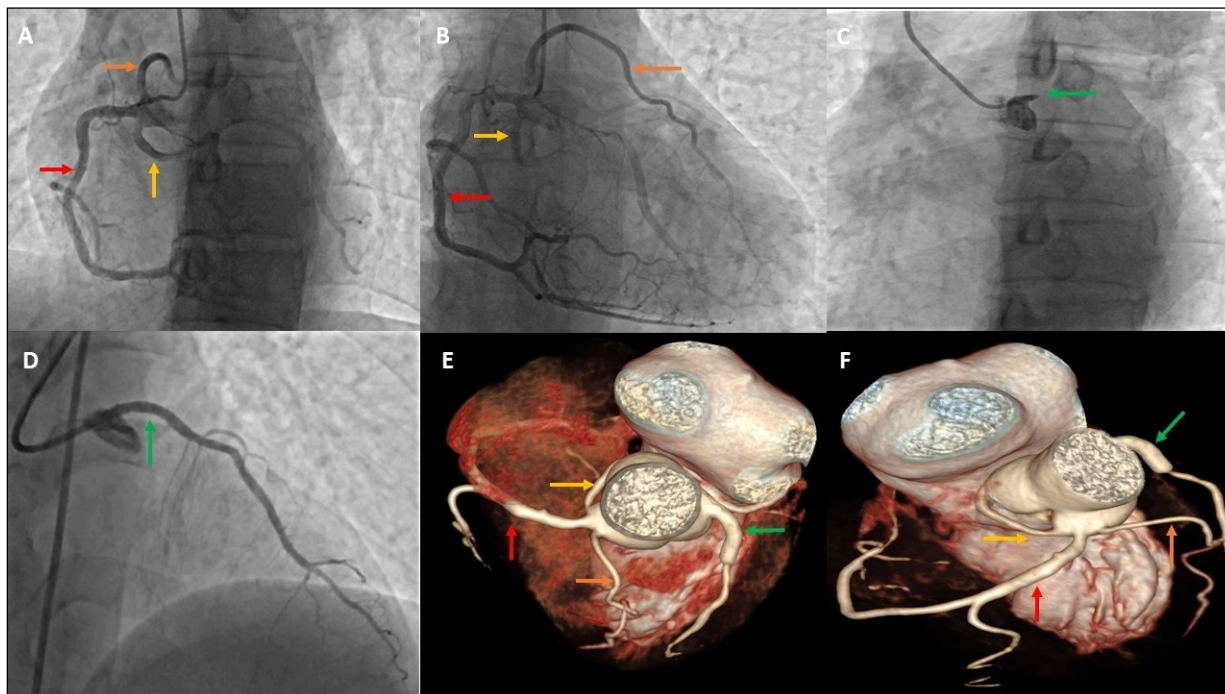
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## KEYWORDS:

dual LAD; Type X dual LAD;  
anomalous coronary; CT  
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**Figure 1 (A, B)** Selective cannulation of the right coronary artery (RCA) (red arrow) with partial filling of the left anterior descending artery (LAD) (orange arrow) and left circumflex artery (LCx) (yellow arrow) seen originating from the right sinus. **(C)** Blunt stump of the second LAD (green arrow), which originates from the left sinus. **(D)** Right anterior oblique cranial view of the LAD from the left sinus (green arrow) after deployment of stent. **(E, F)** Cardiac computed tomography angiography shows the origin of the RCA (red arrow), LAD (orange arrow), and LCx (yellow arrow) from the right coronary sinus as well as the second LAD from the left coronary sinus (green arrow).

A 49-year-old male presented with chest pain that continued for 5 hours. On examination, his blood pressure was 90/60 mm Hg, with a heart rate of 110/minute. Electrocardiography showed new-onset right bundle branch block with ST-segment depression in the inferior leads. Echocardiography showed mild hypokinesia of the apex with an ejection fraction of 45%. Coronary angiography revealed that all three coronaries were arising from the right coronary sinus and appeared normal in caliber and TIMI 3 flow (Figure 1A, 1B). We then probed the left sinus and found the stump of an obstructed accessory left anterior descending (LAD) artery (Figure 1C). When probing this vessel with a workhorse wire, we established antegrade flow. Subsequently, after balloon dilatations, we deployed a drug-eluting size 3 stent (28 mm), achieving TIMI 3 flow distally (Figure 1D). Dual LAD “Type X” anatomy was later confirmed with computed tomography angiography (Figure 1E, 1F).

Coronary artery anomalies are identified in approximately 1% of diagnostic angiograms. A dual LAD represents a small subset but may have profound implications during interventional procedures. The Type X variant of dual LAD, with a long LAD from the right coronary cusp and a shorter LAD from the left sinus, is the least common version.<sup>1</sup>

## COMPETING INTERESTS

The authors have no competing interests to declare.

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## REFERENCE

1. Kumar D, Aggarwal K, Suman S, et al. Anomalous Origin of the Left Main Coronary Artery from the Right Coronary Sinus. *Cureus*. 2025 Mar 22;17(3):e80995. doi: [10.7759/cureus.80995](https://doi.org/10.7759/cureus.80995)

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