

Right coronary artery to right atrial fistula: a case report

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KEYWORDS: coronary artery fistula, right coronary artery, right atrium.

CITATION: Cardiol Croat. 2026;21(1-2):16-7. | <https://doi.org/10.15836/ccar2026.16>

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Introduction: A coronary artery fistula (CAF) represents an abnormal connection between a coronary artery and a cardiac chamber or great vessel, either congenital or acquired. The incidence of CAF on coronary angiography (CAG) is 0.2–0.6%, most commonly originating from the right coronary artery (RCA, 50–60%), left anterior descending (LAD, 25–42%), or circumflex artery (ACx, 18%). Small CAFs are often asymptomatic, while larger fistulas may produce myocardial steal, ischemia, or heart failure. Chronic high-flow fistulas can cause aneurysmal dilatation or thrombosis, requiring percutaneous transcatheter closure (TCC) or surgical ligation.¹⁻⁴

Case report: 58-year-old man presented with non-ST-elevation myocardial infarction (NSTEMI). CAG revealed subocclusive stenosis of the proximal LAD, 60–70% stenosis of the distal ACx and obtuse marginal (OM) 1, and no significant RCA stenosis. Percutaneous coronary intervention (PCI) with two drug-eluting stents (DES) was performed in the LAD. Incidentally, CAFs from the proximal LAD and RCA to the pulmonary artery (PA) were suspected on angiography (**Figure 1**). Multislice computed tomography coronary angiography (MSCT) demonstrated a significant RCA-to-right atrium (RA) fistula located between the aorta and PA, forming a small vascular conglomerate adjacent to the RA (**Figures 2 and 3**). Cardiac magnetic resonance imaging (MRI) was recommended for cardiac pulmonary artery flow (CPAF) and Qp:Qs ratio to assess shunt volume. The need for percutaneous closure will be evaluated based on these findings.

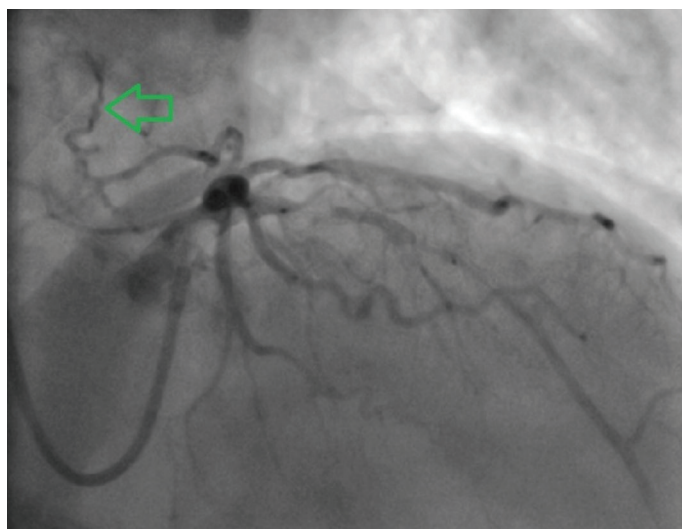


FIGURE 1. Coronary angiogram of the coronary artery fistula originating from the proximal left anterior descending artery.

RECEIVED:
October 20, 2025

ACCEPTED:
November 14, 2025



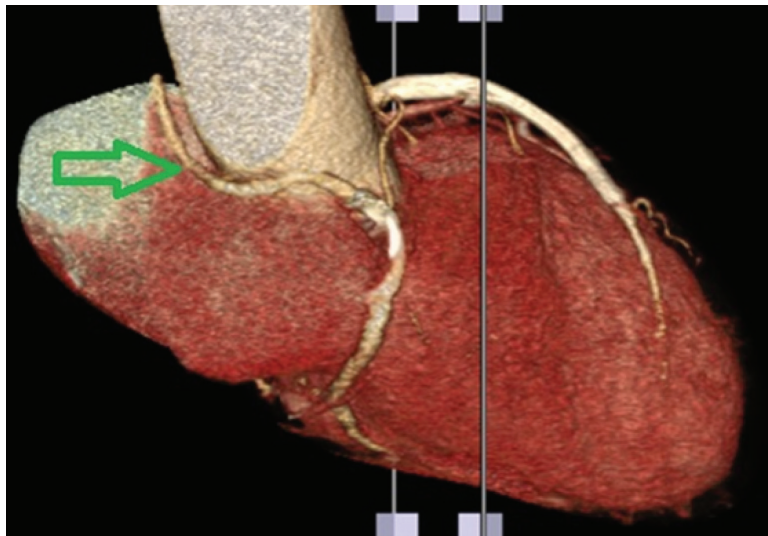


FIGURE 2. Multislice computed tomography coronarography image of the coronary artery fistula originating from the proximal right coronary artery, located between the aorta and the pulmonary artery.

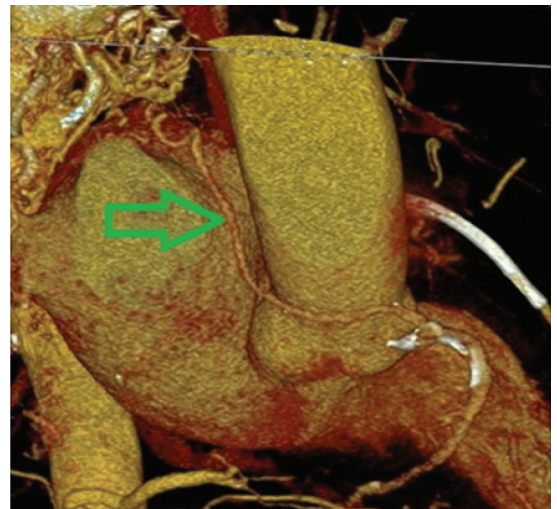


FIGURE 3. Multislice computed tomography coronarography imaging of the coronary artery fistula lying between the aorta and the pulmonary artery and continuing into a vascular conglomerate.

Conclusion: Coronary artery fistulas, although rare, may have serious clinical implications. When detected by angiography, complementary imaging with CT or MRI helps define anatomy and quantify shunt flow. In significant cases, percutaneous TCC should be considered to prevent ischemia, heart failure, or aneurysmal complications.

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