

IMAGES IN INTERVENTION

Concomitant Anomalous Right Coronary Artery and Iatrogenic Left Circumflex Artery Entrapment, Treated Successfully With Percutaneous Coronary Intervention

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The incidence of anomalous coronary arteries is ~1%, with heterogeneous clinical outcomes (1). Left circumflex coronary artery (LCX) entrapment is an infrequently reported complication of mitral valve

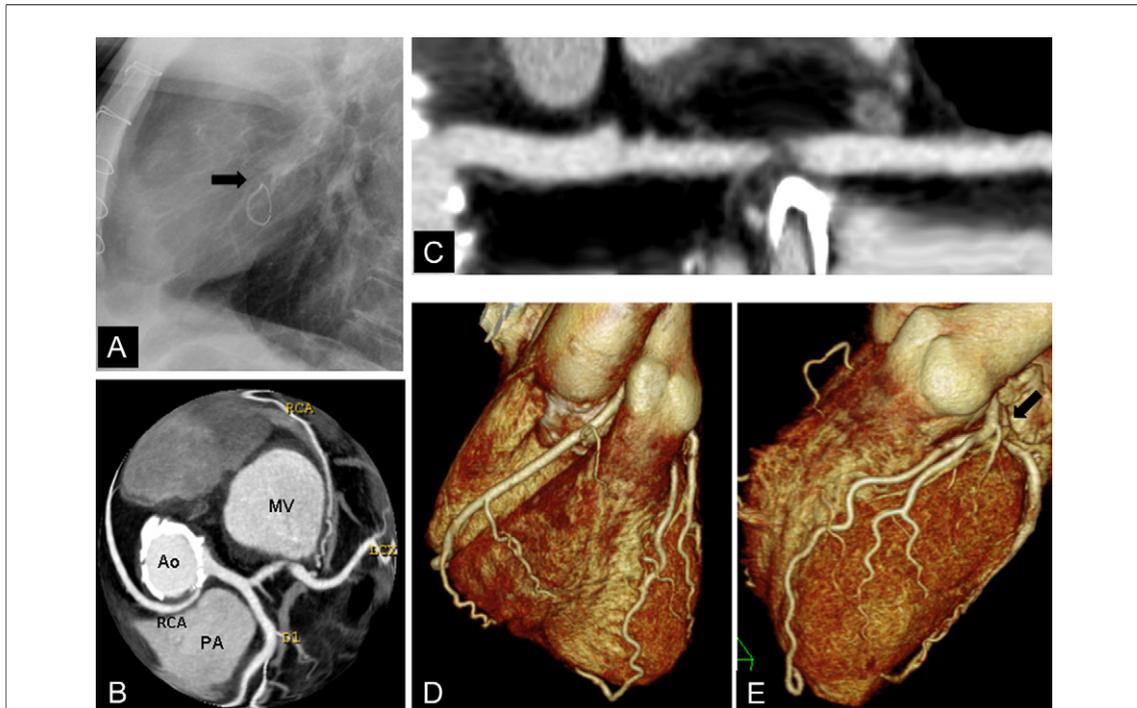


Figure 1. CT Imaging of the Coronary Abnormalities

Lateral chest radiograph showing focal protrusion (arrow) of the mitral annuloplasty ring (A). Computed tomography (CT) angiography revealed the anomalous origin of the right coronary artery (RCA) from the left coronary cusp and taking an interarterial course between the aorta (Ao) and the pulmonary artery (PA) with proximal narrowing. Also seen is the proximal left circumflex (LCX) artery coursing adjacent to the mitral valve (MV) with a focal segment of traction and significant stenosis (B). Multiplanar reconstruction shows the mitral annuloplasty ring and proximal stenosis of the LCX, possibly due to entrapment (C). Volume-rendered reconstruction images show the anomalous origin and the subsequent course of the RCA (D) and the course of LCX with focal narrowing (arrow) at the mitral annular area (E). D1 = first diagonal branch.

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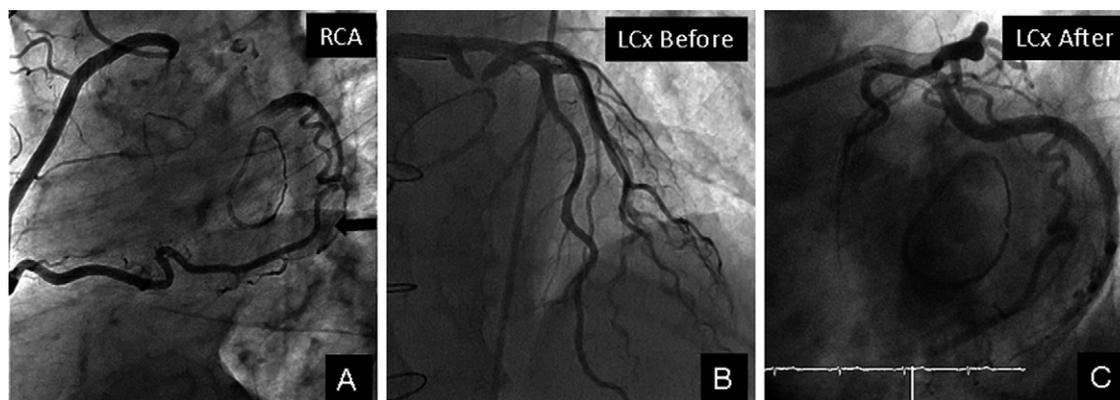


Figure 2. Coronary Angiography Pre- and Post-Intervention

Coronary angiography showing anomalous origin of RCA providing distal collaterals to the LCX (arrow) (A), the proximal subtotal stenosis of the LCX (B), and no residual stenosis post stenting (C). Abbreviations as in Figure 1.

surgery and correlates to the dominance and the distance of the artery from the mitral annulus. Nearly all reported cases present intraoperatively or immediately post-operatively (2). Our patient presented 14 years following mitral valve annuloplasty with long-standing chest pain and dyspnea on exertion. Myocardial perfusion imaging showed a large area of inferolateral ischemia. Computed tomography angiography revealed an anomalous right coronary artery (RCA) arising from the left cusp and coursing between the great arteries with a narrowed proximal segment. It also showed a severe focal stenosis of the LCX with traction of the artery toward the mitral valve, suggestive of an iatrogenic entrapment (Fig. 1).

Cardiac catheterization confirmed the anomalous origin of the RCA and the high-grade stenosis of mid LCX (Fig. 2). The LCX intravascular ultrasound imaging revealed a very fibrotic, high-grade stenosis of the mid vessel. This lesion was treated with serial low-pressure balloon inflations using a compliant balloon. Stent implantation was performed using a 4.5 × 15-mm bare-metal stent (Vision,

Abbott Vascular, Abbott Park, Illinois) followed by post-dilatation with a noncompliant balloon. The patient continues to be completely symptom free at 6-month follow-up.

It is an unusual case of these 2 abnormalities occurring in the same patient with a late presentation, albeit with long-standing symptoms. In the literature, management of both conditions is largely anecdotal, and percutaneous coronary intervention is infrequently used.

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