

## Two Cases of Single Coronary Artery Ostium Presenting with Acute Myocardial Infarction: Right Coronary Artery Arising from Left Anterior Descending Artery

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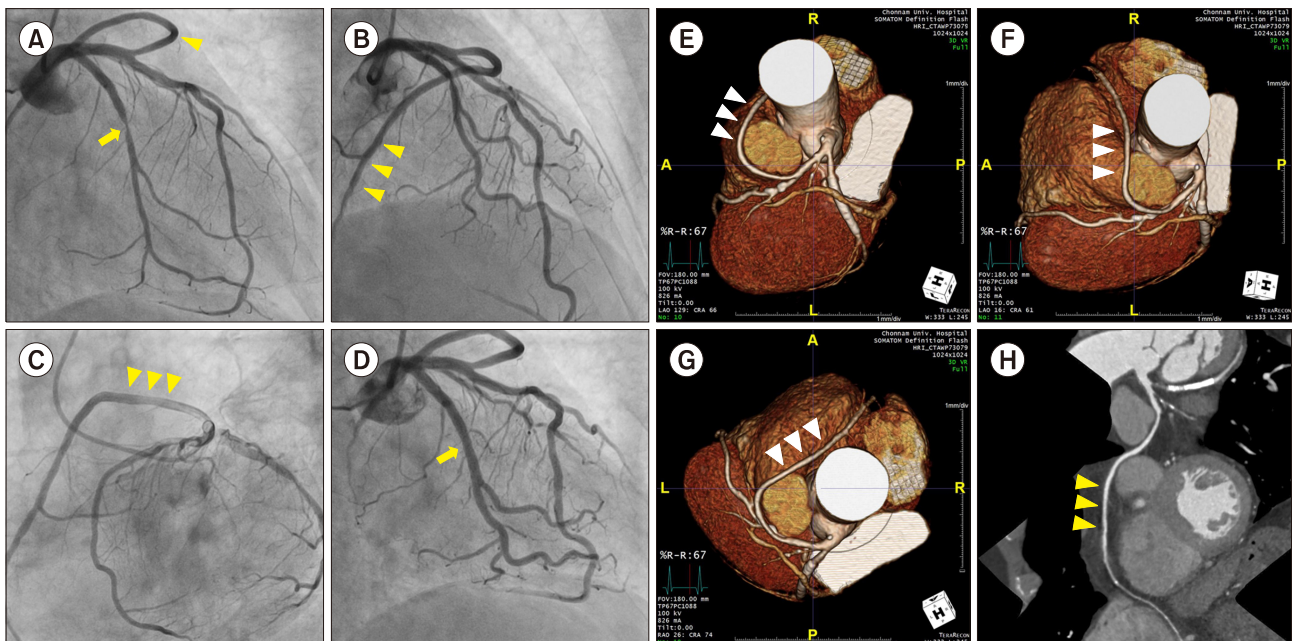
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Based on contemporary articles, the prevalence of coronary artery anomalies has been found to be less than 0.024-0.044%.<sup>1</sup> The single coronary artery anomaly (SCA), a subset of coronary artery anomalies, is the condition that only one coronary artery rises from a single coronary ostial area to supply the blood flow to the entire heart.<sup>2</sup> This pathology has a variety of clinical manifestations, ranging from asymptomatic conditions to sudden cardiac arrest.<sup>2</sup> We introduce two rare clinical cases of SCA that presented at our tertiary center.

A 64-year-old male patient visited our hospital for a non-ST-segment elevation myocardial infarction. He received percutaneous coronary intervention (PCI) for left circum-

flex artery (LCX) 1 year ago at another hospital. A coronary angiography was done, and it revealed critical, in-stent restenosis in the LCX with an anomalous artery from the left anterior descending artery (LAD) covering right coronary artery (RCA) territory (Fig. 1A-C). PCI was done for the LCX using a 2.75×19 mm Biomime® (Meril Life Sciences, Vapi, India; Fig. 1D). A 3-D reconstruction image using cardiac computed tomography (CT) also demonstrated anomalous origin of RCA from LAD (Fig. 1E-H).

The second case is a 65-year-old male patient with ST-segment elevation myocardial infarction at the anterior wall. Primary PCI was done, and it revealed a thrombotic



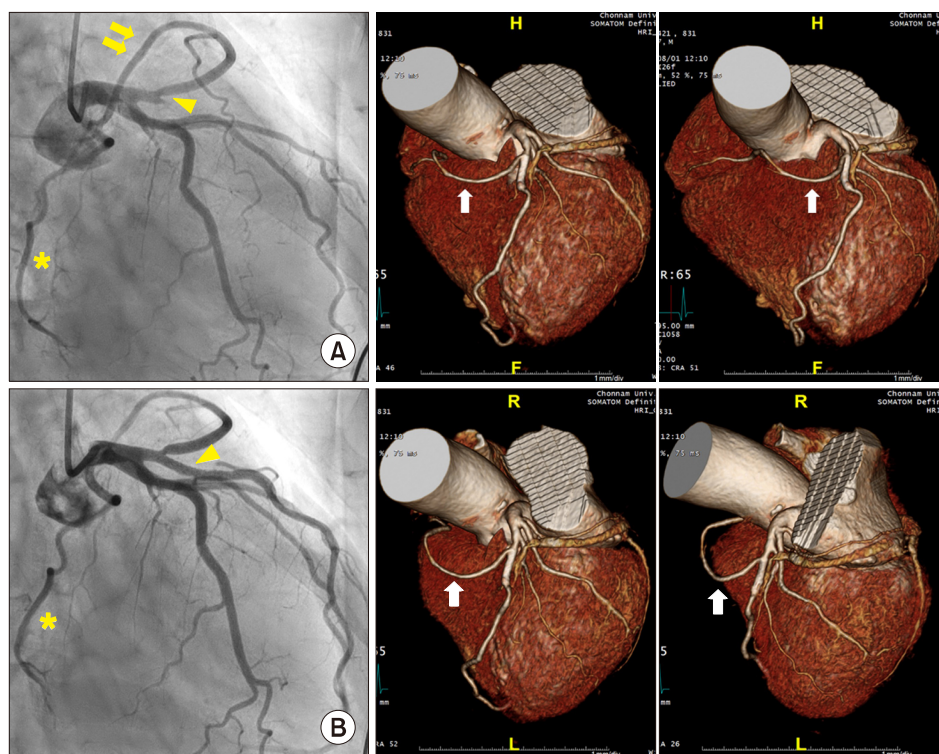
**FIG. 1.** Coronary angiography revealed critical in-stent restenosis in left circumflex artery (LCX; A, arrow) with anomalous artery from left anterior descending artery covering right coronary artery territory (A-C, arrow head). Percutaneous coronary intervention was done for LCX using a 2.75×19 mm bioabsorbable polymer drug-eluting stent (D, arrow). Cardiac computed tomography (E-H) demonstrated anomalous origin of right coronary artery from left anterior descending artery (arrow head).

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**FIG. 2.** Coronary angiography revealed thrombotic total occlusion in proximal left anterior descending artery (LAD; A, arrow head) and anomalous origin of right coronary artery (RCA) from LAD above obstruction site (arrow). There was also abnormal branch from left main to RCA (asterisk). Percutaneous coronary intervention was successfully done using a 3.0×18 mm bioabsorbable polymer drug-eluting stent (B, arrow head). Cardiac computed tomography (right panel) demonstrated anomalous origin of right coronary artery from left anterior descending artery (arrow).

total occlusion in the proximal LAD and an anomalous origin of RCA from LAD above the obstruction site. There was also an abnormal branch from the left main to RCA. PCI was successfully done using a 3.0×18 mm Biomatrix® (Biosensors International, Singapore; Fig. 2A, B). An anomalous origin of RCA from the LAD just proximal to the stent was clearly seen in cardiac CT (Fig. 2, right panel). The two patients were asymptomatic for 1 year after the successful PCI.

Single coronary artery ostium is very rare among anomalous coronary artery, and usually, it is discovered incidentally.<sup>2,3</sup> Although several cases with LAD from RCA or right coronary cusp were reported, there were few reports for this extremely rare variant of anomalous coronary artery in Korea.<sup>4,5</sup> Our two cases of SCA were coincidentally confirmed during the CAG and PCI for the treatment of acute myocardial infarction.

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#### CONFLICT OF INTEREST STATEMENT

None declared.

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