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Case Report

Percutaneous coronary intervention in a rare variety of single coronary artery



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ABSTRACT

We present a case of 50-year-old male having unstable angina. A rare type of single coronary artery was identified during the Coronary angiogram. The left anterior descending (LAD) and left circumflex artery (LCX) had originated from the proximal segment of right coronary artery along with significant lesion in LCX. Computed tomographic (CT) coronary angiogram confirmed the origin and course following which successful percutaneous coronary intervention (PCI) was done to LCX. The incidence of this type of coronary anomaly is 0.004%. We emphasize the importance of having a CT coronary angiogram to identify the course before the intervention. The procedural risk during PCI in patients with single coronary ostium is high. Moreover, the angulation and course of the culprit artery also pose a challenge. Good coaxial guide support by using an appropriate guiding catheter is the key to success.

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A previously healthy 50-year-old male presented to us with unstable angina. ECG and echocardiography were unremarkable. During coronary angiography, non-selective left coronary sinus angiogram was performed in view of the inability to selectively cannulate left coronary artery, which revealed blunt left coronary sinus. Right coronary artery angiogram showed single coronary artery arising from right coronary sinus, which gives rise to left coronary artery and left circumflex artery (LCX) separately in its proximal part (Fig. 1, Panel A, B; video clip 1). Furthermore, LCX had 85% stenosis in its proximal segment. According to modified Lipton's classification of single coronary artery,¹ this was a

case of Lipton type R-III or Yamanaka type R-IIIC. The findings were confirmed with multislice computed tomographic coronary angiography (CT-CAG) (Panels D and E). Later successful percutaneous coronary intervention of LCX was performed using 6F Amplatz left II guide catheter.

Our case belongs to class R-IIIC, which is uncommon among classes of single coronary artery with incidence of 0.004%.¹ We emphasize the importance of CT-CAG to identify the anatomy and course before the intervention. During PCI, the angulation and course of the culprit artery pose a challenge. Good coaxial guide support by using appropriate guiding catheter is the key to success.

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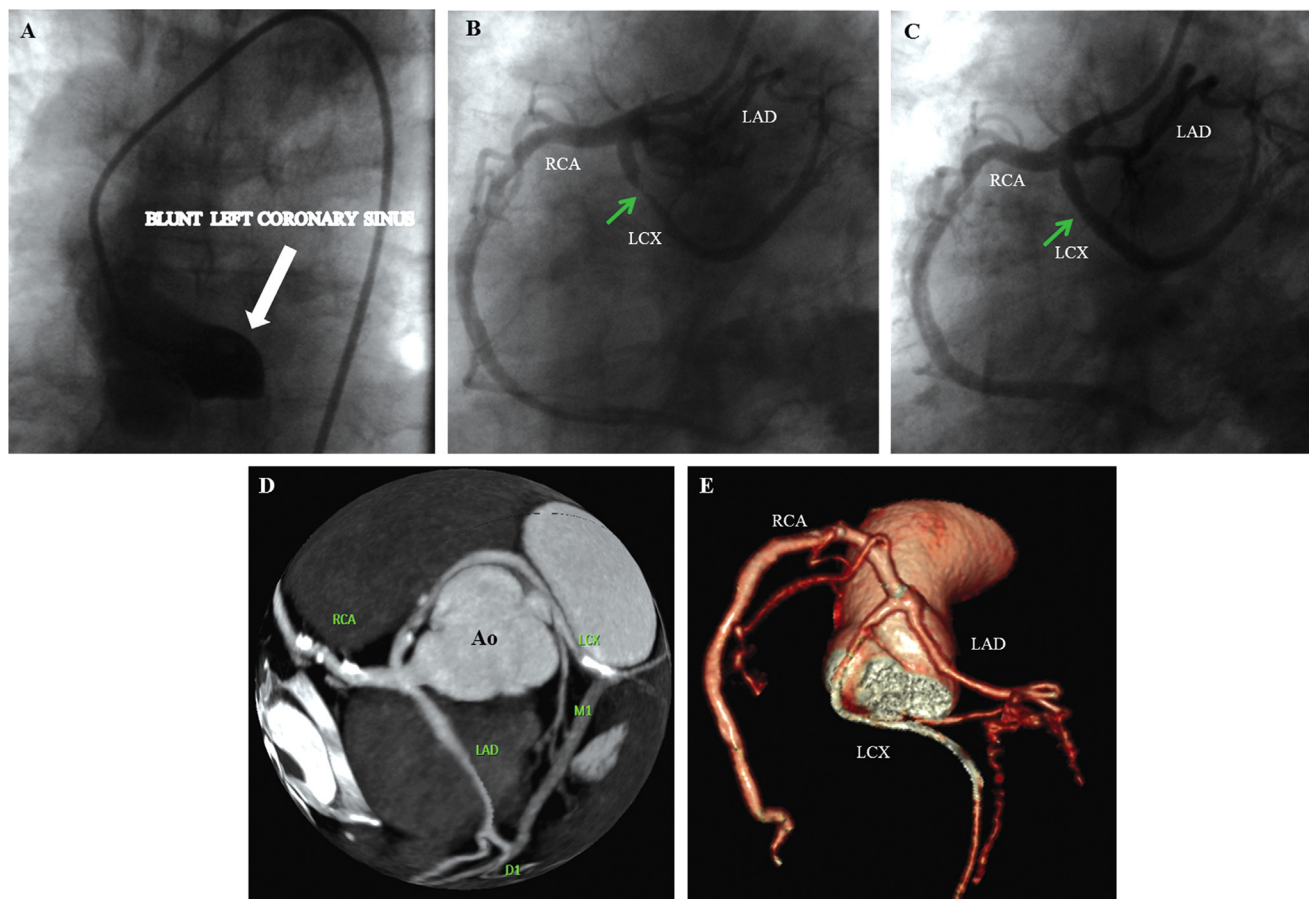


Fig. 1 – Coronary angiographic and computed tomography findings of Lipton type III single coronary artery. Coronary angiography: (A) AP view demonstrating blunt left coronary sinus and (B) LAO 45° view reveals single coronary artery arising from the right coronary sinus with separate origins of LAD and LCX from the proximal segment of the same. Proximal segment of LCX shows 80% calcific stenosis (small arrow, B) which was addressed with successful PTCA (C). CT coronary angiogram confirms the origin and course of each coronary artery along with calcific lesion in proximal LCX (D, E).

Conflicts of interest

The authors have none to declare.

Authors' contribution

YS, VKV, NCM and BRT – conception, design, analysis & drafting of the manuscript. BCS & MCN – critically reviewed important intellectual content and made the final approval.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.ihj.2015.06.032](https://doi.org/10.1016/j.ihj.2015.06.032).

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