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Case Report

Dual-artery stenting of a type III single coronary artery from right aortic sinus

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ABSTRACT

A single coronary artery presenting with stenosis in two of the three vessels arising from a common ostium is a rare anomaly Lipton et al. proposed a classification, which was modified by Yamanaka and Hobbs. In our case, a single coronary artery was giving rise to the LAD, left circumflex (LCx), and the right coronary artery (RCA). There was 80% stenosis in the ostium of the LCx. The RCA in the mid and distal segment had stenosis of 80% and 70%, respectively. We were able to successfully stent the three stenotic segments.

A 56-year-old male, with a history of diabetes, presented with infero-lateral myocardial infarction. The patient was taken up for primary PCI. Since we were unable to cannulate the left coronary system despite several attempts, anticipating an anomaly, we cannulated the right coronary system. We found a single coronary artery, which was giving rise to the LAD, LCx, and the RCA. There was 80% stenosis in the ostium of the left circumflex (LCx). The right coronary artery (RCA) in the mid and distal segment had stenosis of 80% and 70%, respectively (Fig. 1A). The lesions in both vessels were crossed using Floppy wires through a 6Fr multipurpose guiding catheter. The RCA was stented with two sirolimus-eluting stents (DES) measuring 3.5 mm × 23 mm and 3 mm × 18 mm to cover the long lesion and the LCx was stented with a 2.25 mm × 20 mm DES (Fig. 1B–D).

Lipton et al. proposed a classification, which was modified by Yamanaka and Hobbs (Fig. 1E). Depending on the sinus of origin, anomalous artery is designated as R (right) or L (left). It is further classified as: Type I: normal course of left or RCA with a continuation into the absent artery's territory. Type II: Anomalous artery arises from the proximal part of the other normal artery and courses the base of the heart before taking the native course. Type III: The LAD and LCx arteries arise from the proximal part of the RCA. The Type III anomalies are very rare.

CT angiogram can be very helpful in defining the anatomical malformation, acute angle take-off, the transmural course, and compression between the great arteries, which would require surgery. PTCA in single coronary artery

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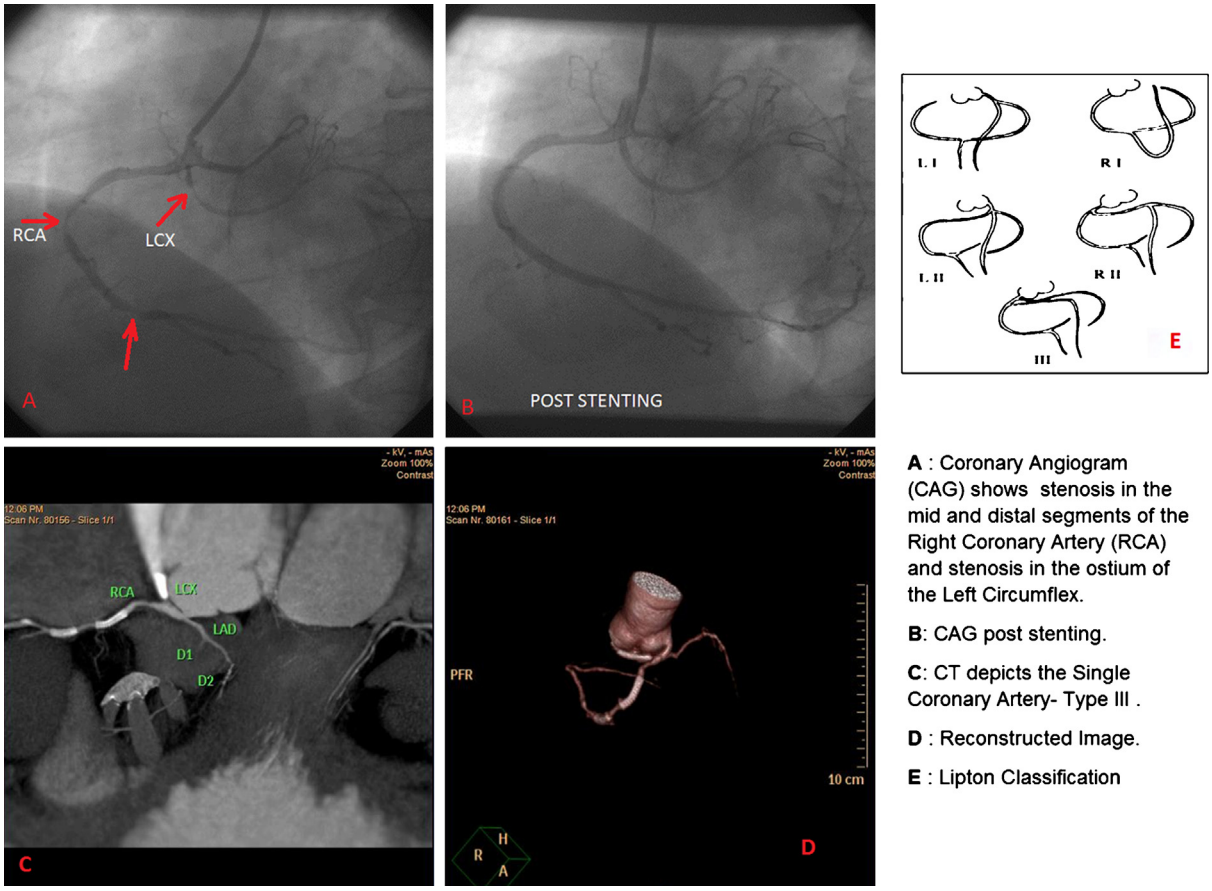

Fig. 1 – (A) Coronary angiogram (CAG) shows stenosis in the mid and distal segments of the right coronary artery (RCA) and stenosis in the ostium of the left circumflex; (B) CAG post-stenting; (C) CT depicts the single coronary artery – Type III; (D) reconstructed image; (E) Lipton classification.

Type III can be catastrophic because the entire myocardium is subtended by an SCA.

The procedure can be complicated by anomalous origin and various take-offs of the vessels, which may require the operator to choose different catheters such as Amplatz or Multipurpose.

Conflicts of interest

The authors have none to declare.

SUGGESTED READING

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