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Double TAP Technique for Left Main Trifurcation

LETTER TO THE EDITOR

To the Editors,

Left main trifurcation (LMT) disease accounts for 10%-15% of all left main cases and presents a challenging situation.[1] The optimal revascularization strategy remains unclear. Here, we present a novel technique for this complex patient population.

A 55-year-old male presented to our emergency department with signs and symptoms of high-risk non-ST elevation myocardial infarction. The patient underwent invasive coronary angiography showing LMT disease involving the left anterior descending artery (LAD) and ramus intermedius (RI) (modified medina 0-1-0-1) as well as non-critical stenosis of the left circumflex (LCX). After an 8-french extra backup guiding catheter was engaged into the left main (LM) and passing the proximal LAD lesion with a guidewire, 2.5 × 15 mm semi-compliant balloon predilatation, and a 3.5 × 38 mm drug-eluting stent (DES) (Firebird, MicroPort Scientific Inc., Shanghai, China) were implanted with the provisional approach from LAD to LM without the side branches wiring due to malignant arrhythmia. Then, the proximal optimization technique (POT) was performed with the 5.0 × 8 mm non-compliant balloon (NCB). Critical stenosis (≥90%) was observed with the control injection in both the LCX and RI ostium. After wiring of both branches, sequential and then simultaneous kissing balloon inflation was performed with 2.5 × 15 mm NCB for both RI and LCX. Then, 3.5 × 12 mm NCB was positioned in LAD,

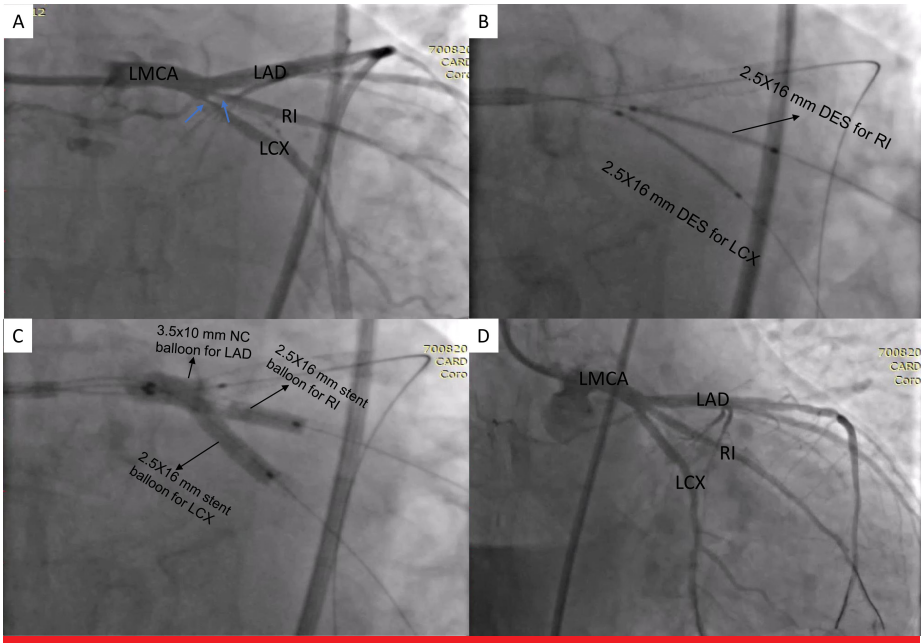

Figure 1. (A) Dissection and non-recovery of ostial severe stenosis (≥90%) were detected in the RI and LCX. (B) The LCX and RI stents were found to be out of optimal position. (C) Final trissing with stent balloons and 3.5 × 10 mm NC balloon. (D) At the 8-month angiography, no re-stenosis was observed in any of the stents. DES, drug-eluting stent; LAD, left anterior descending artery; LCX, left circumflex artery; LM, left main coronary artery; NC, non-compliant; RI, ramus intermedius.

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and trissing, where the 3 balloons were inflated at the same time (LM-LAD, LM-RI, and LM-LCX). Upon detection of non-recovery of severe (≥90%) stenosis and dissection in the RI and LCX (Figure 1A), and increasing ischemia symptoms (e.g., chest pain, ventricular tachycardia), a double T and small protrusion (TAP) technique was planned without physiological assessment. The optimal positioning of the RI and LCX stents (2.5 × 16 mm DES) was confirmed to protrude 0.5-1 mm into the LM stent (Figure 1B). A 2.5 × 16 mm DES implantation from the LM to the LCX was achieved with the TAP technique. Besides, the 2.5 × 16 mm DES was implanted from RI to LM with the TAP technique. To avoid excessive protrusion of LCX and RI stents into LM or ostial geographic miss, 2 stents were implanted sequentially instead of simultaneously. Then, the stent balloons were pulled back 3 mm and the proximal side branch optimization technique was performed. Then, a 3.5 × 10 mm NCB was positioned in the LAD, and the trissing was performed again (Figure 1C). After performing POT with the 5.0 × 8 mm NCB, the procedure was terminated with the optimal angiographic image. He was discharged uneventfully and did well during the 8 months of angiographic follow-up (Figure 1D).

Informed Consent: Detailed written informed consent was obtained from the patient for the publication of this case and its images.

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