

## Left main coronary angioplasty performed as a single-day procedure: A modern approach or unnecessary risk?

Andrzej Ciszewski, Paweł Tyczyński, Adam Witkowski

Department of Cardiology and Invasive Angiology, National Institute of Cardiology, Warszawa, Poland

### Correspondence to:

Andrzej Ciszewski, MD, PhD,  
Department of Cardiology and  
Invasive Angiology,  
National Institute of Cardiology,  
Alpejska 42, 04–628 Warszawa,  
Poland,  
phone: +48 22 34 34 013,  
e-mail: aciszewski@ikard.pl

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Several trials proved the feasibility and safety of a single-day coronary angioplasty (SD PCI) in stable angina, however, high-risk patients were underrepresented in the studied groups [1–3]. Therefore, data about SD PCI of the unprotected left main coronary artery (LMCA) bifurcation are sparse and worthy of discussion. The number of SD PCI increases rapidly because it reduces hospital costs and the risk of in-hospital infection; it also increases the number of performed procedures [2, 3]. At our center, we offer SD PCI to patients without age limits, with stable angina, a possible radial approach, a left ventricular ejection fraction >30%, normal renal function, domiciled not far from the hospital (transport <60 minutes), and no planned PCI of coronary bypass or chronic total occlusion [4].

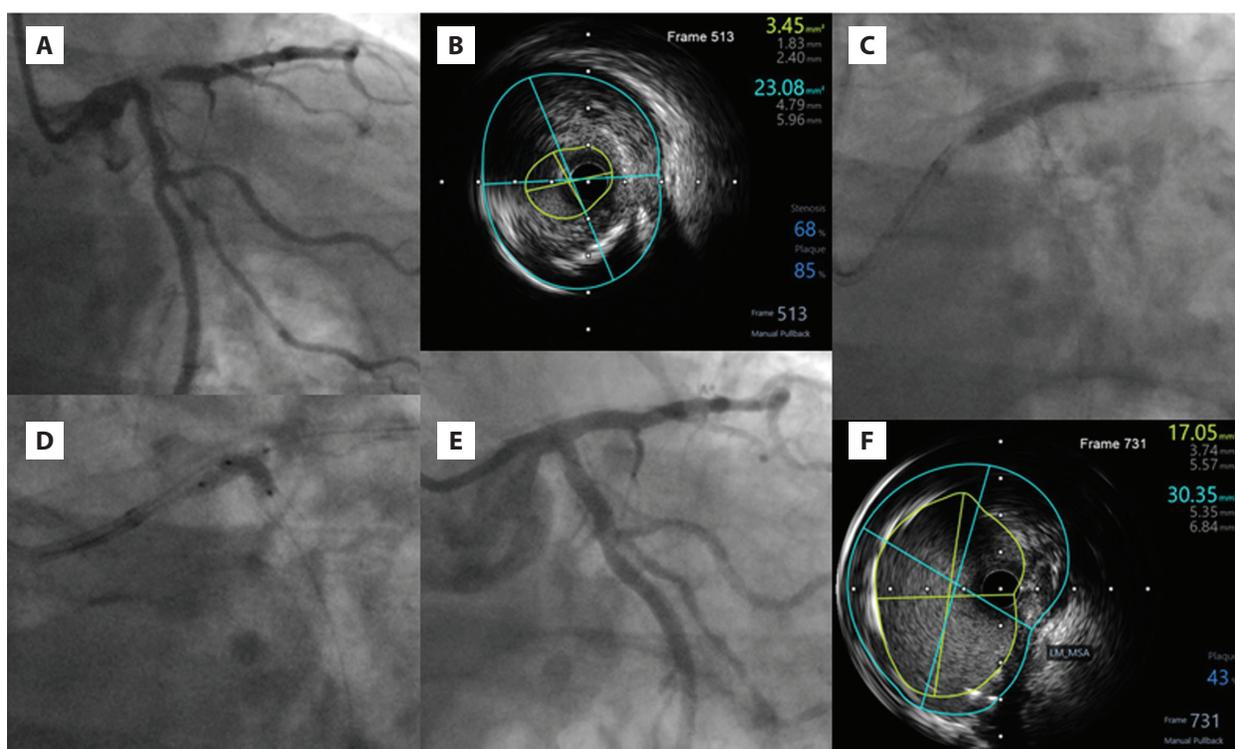
Our patient was a 68-year-old man, with type 2 diabetes and hyperlipidemia. He had a history of inferior myocardial infarction treated by angioplasty of the circumflex (Cx) artery with a drug eluting stent (DES) in 2013 and a planned angioplasty with DES of proximal Cx in 2019. He was referred for coronary angiography due to the recurrence of typical angina. The patient had good cardiac contractility and normal renal function. After coronary angiography showing critical ostial stenosis of the left anterior descending (LAD) artery, Medina 0–1–0 (Figure 1A), the patient refused cardiovascular surgery and accepted high-risk angioplasty.

The angioplasty of the unprotected LMCA bifurcation was performed from the radial approach according to the current standards. Figure 1 shows the key steps of the procedure. First, we performed a predilatation of LAD ostial lesion with noncompliant balloons (2.5 and 3.5 × 12 mm, 12 atm), and, due to dissection at the end of the predilated zone,

a DES (3.5 × 16 mm, 14 atm) was implanted in the LAD around 7 mm from the ostium. Then a DES (4.0 × 18 mm, 14 atm) was implanted to the left main and the LAD (Figure 1C). We then used the proximal optimization technique of the LMCA, and intravascular ultrasound (IVUS) to confirm satisfactory lesion dilatation and stent apposition. The next steps were: “kissing” of the LAD/Cx bifurcation (Figure 1C), second proximal optimization technique of the left main (balloon 5.0 × 8 mm, 10 atm). A good final angiographic result (Figure 1E) was confirmed by IVUS (Figure 1F). The final IVUS showed correct stent apposition with a minimal stent area of 17 mm<sup>2</sup>, no dissection, no plaque protrusion.

After the LMCA and LAD angioplasty, the patient remained in a sitting position in an armchair and received a fluid infusion. He was managed according to our protocol [4]. The patient’s status was normal, and the electrocardiogram showed no ST-T deviations. The radial artery compression was removed, and the patient left the hospital 8 hours after the PCI. The final IVUS showing a good stent apposition and no dissection was essential in making our decision to discharge the patient on the day of the procedure. The follow-up visit, 3 months and 7 days after the PCI, revealed no complications and no ischemic symptoms. The patient found the early discharge safe and more convenient than the approach with overnight hospitalization.

From this case presentation, we can conclude that the LMCA angioplasty may be safely performed as SD PCI in selected patients at experienced centers and that a confirmation of good angiographic results based on intravascular imaging (IVUS or OCT) after a higher-risk angioplasty is important in early discharge decisions.



**Figure 1.** A. Critical ostial LAD stenosis. Severe calcifications in the LM and the proximal LAD. B. IVUS of the LAD ostial lesion. Mix plaque with deep calcifications. Plaque burden over 80%. MLA 3.45 mm<sup>2</sup>. C. Implantation of DES (4.0 × 18 mm, 14 atm) to the LM and the LAD. Visible stents in the Cx ostium and the proximal LAD. D. “Kissing” angioplasty of the LAD/Cx bifurcation (NC balloons: 3.0 × 12 mm and 3.0 × 9 mm, 6 atm). E. Final angiographic result. Successful dilatation of the ostial LAD stenosis and stent implantation to the LM and the proximal LAD. No residual stenosis and good stent dilatation in the LM after the final POT with an NC balloon (5.0 × 12 mm, 10 atm). F. Final IVUS image showing correct stent apposition with MSA 17mm<sup>2</sup>. No dissection on both stent edges, no plaque protrusion

Abbreviations: DES, drug eluting stent; IVUS, intravascular ultrasound; LAD, left anterior descending; LM, left main; MLA, minimal luminal area; MSA, minimal stent area; NC, noncompliant; POT, proximal optimization technique

## Article information

**Conflict of interest:** None declared.

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