

Extremely high-risk percutaneous coronary intervention in an elderly patient with multiple comorbidities and good general condition

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An 86-year-old woman with typical stenocardia was admitted to the hospital due to non-ST-segment elevation myocardial infarction (NSTEMI). The medical history revealed prior NSTEMIs treated without coronary interventions, chronic kidney disease, arterial hypertension, and prior transient ischemic attack. Echocardiography disclosed moderately decreased left ventricular ejection fraction (39%) and segmental wall contractility disorders. The patient was directly transferred to the catheterization laboratory. Coronary angiography revealed multivessel disease with critical stenosis of the left main coronary artery (LMCA) and heavily calcified arteries (FIGURE 1A and 1B). The cardiovascular risk assessed with the SYNTAX II score was 55.8 points for percutaneous coronary intervention (PCI) and 43.3 points for coronary artery bypass grafting. Mortality risk assessed with the Society of Thoracic Surgery Risk Score was 6.6%. The risk calculated with the European System for Cardiac Operative Risk Evaluation II was 15.6%. The patient was in a very good mental and cognitive state. The PRISMA-7 questionnaire and Fried Frailty Phenotype Questionnaire did not indicate severe frailty.

Initially, after the heart team consultation, the patient was qualified for PCI. However, due to several doubts raised by experienced intervention cardiologists, the patient was requalified for coronary artery bypass grafting. Unexpectedly, the patient refused cardiac surgery and finally underwent PCI. The procedure was performed via right femoral artery access, 6-French system. The lesion in the LMCA and the left anterior descending artery (LAD) was

crossed with the Whisper low support guidewire (Boston Scientific, Marlborough, Massachusetts, United States). The BMW Universal wire (Abbott Vascular, Abbott Park, Illinois, United States) was inserted into the circumflex artery. Then, by applying the Sprinter Legend over-the-wire balloon catheter 1.25 × 10 mm (Medtronic Vascular, Dublin, Ireland), the guidewire in the LAD was exchanged for the Rotawire Floppy guidewire (Boston Scientific). Rotablation was performed by means of the Rotablator Rotational Atherectomy System using 1.25 burr diameter (Boston Scientific). After predilatation, the drug-eluting stent Orsiro 2.5 × 18 mm (Biotronic, Berlin, Germany) was implanted into the medial segment of the LAD. The intravascular ultrasound was used to assess the LMCA and LAD diameters (FIGURE 1C). Based on this, implantation of the next 2 drug-eluting stents was proceeded from the ostium of the LMCA to the LAD (Orsiro 3.0 × 26 mm and 4.0 × 12 mm; Beltronic). Finally, the proximal optimization technique with noncompliant balloon 3.5 × 15 mm and 4.5 × 15 mm (Medtronic, Minneapolis, Minnesota, United States) was applied with an optimal stent apposition, as confirmed by intravascular ultrasound (FIGURE 1D). After a couple of days of intensive hospital rehabilitation, psychological care, and pharmacological treatment, the patient was discharged home in a good general condition.

At the time of aging society, therapeutic decision-making issues related to patients with numerous comorbidities and complex coronary artery diseases are becoming a serious concern. Current risk scores may have limitations

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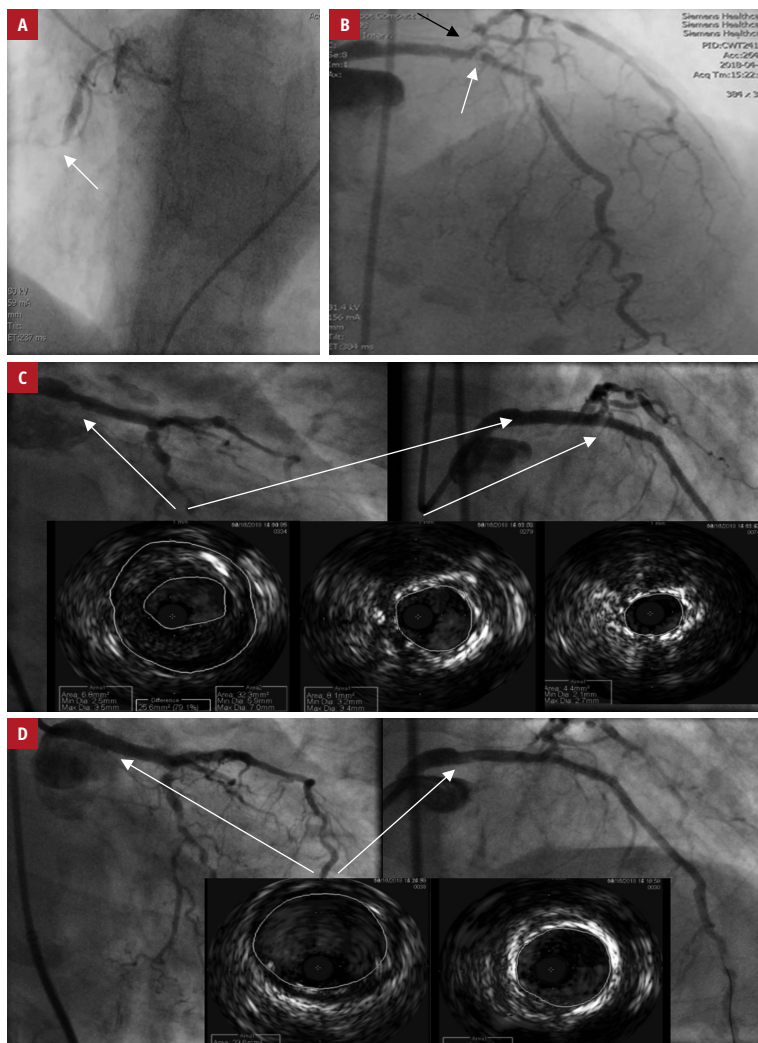


FIGURE 1 **A** – right coronary artery occluded in the medial segment (arrow); **B** – heavy calcifications, 99% stenoses in the left main coronary artery (LMCA) and the ostium of the left anterior descending artery (LAD) (white arrow), 90% narrowing in the medial and distal LAD, 99% stenoses in the proximal and medial circumflex artery (black arrow); **C** – significant stenosis of the LMCA (arrows) imaged in intravenous ultrasound (IVUS); **D** – IVUS of LMCA after stent implantation

in the elderly because they were calibrated for middle-aged population. Therefore, cognitive testing and frailty risk scores seem to be complementary and indispensable elements of assessing this group of patients during consultations with cardiac surgeons and interventional cardiologists before qualifying for revascularization. It is worth emphasizing that multiple comorbidities and advanced age are not a contraindication for high-risk PCI involving highly advanced percutaneous techniques such as rotablation and, in the case of selected patients, advanced and complex PCI procedures enable revascularization and patients' survival. Following the recommendations by the European Society of Cardiology, due steps undertaken during the procedure may help prevent severe complications.¹

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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