1042 **A case of successful treatment of a left main bifurcation lesion using rotational atherectomy under intra-aortic balloon pump support**

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An 84-year-old man with a history of old inferior myocardial infarction and type 2 diabetes mellitus on insulin therapy was referred to our hospital due to exertional angina. T-wave inversion was observed in the precordial leads on electrocardiography. Although transthoracic echocardiography revealed wall motion abnormalities in the inferior wall, left ventricular systolic function was preserved, with an ejection fraction of 50 %. Coronary angiography showed severe stenosis with calcified nodules at the left main coronary bifurcation, and debulking was considered necessary for percutaneous coronary intervention (PCI). He was already treated with optimal medical therapy including clopidogrel and carvedilol, but his symptoms were progressively worsening. The case was discussed with our heart team, and PCI was selected due to his advanced age. Given his previous inferior myocardial infarction, any complication in the left coronary artery during the procedure was considered potentially fatal. Thus, PCI was performed under intra-aortic balloon pump (IABP) and temporary pacing support. A 7-Fr Super Power Backup 3.75 guiding catheter (Asahi Intecc, Aichi, Japan) was used via the left radial artery. Initially, a Sion Blue guidewire (Asahi Intecc, Aichi, Japan) was advanced to the distal left anterior descending coronary artery (LAD). Since intravascular ultrasound (IVUS) (OptiCross, Boston Scientific, MA, USA) could not cross the left main bifurcation lesion, we decided to perform rotational atherectomy (RA) from the left main coronary artery (LMCA) to the LAD. A microcatheter was used to exchange the Sion Blue for a RotaWire Extra-support (Boston Scientific, Marlborough, MA, USA). RA with a 1.5 mm burr was performed. After 3 sessions of RA, IVUS was used to assess the lesion. As further debulking was deemed necessary, an additional RA was performed using a 2.0 mm burr. Subsequently, a Sion Blue guidewire was advanced into the distal left circumflex artery (LCX), and IVUS evaluation was performed. Severe calcification was observed opposite the carina at the LCX ostium, prompting RA from the LMCA to the LCX. One session of RA was performed using a 1.5 mm burr. With IABP and temporary pacing support, hemodynamic stability was maintained throughout the procedure, allowing for aggressive debulking. After dilation from the LMCA to the LAD using a 2.75 mm cutting balloon, the lesion was finished with a 2.75 mm drug-coated balloon. Thrombolysis in Myocardial Infarction grade 3 flow in the left coronary artery was preserved. IABP was removed postoperatively, and no elevation of myocardial enzymes was observed on the following day. The patient was discharged without symptoms on the third postoperative day. The management of calcified nodules remains challenging, although debulking devices may offer benefits despite their associated risks. Careful attention is warranted during PCI for calcified nodules, especially in high-risk lesions such as the LMCA.