1012 **Percutaneous coronary intervention for acute coronary syndrome caused by a true bifurcation lesion involving the left main trunk and the ostia of the left anterior descending and left circumflex arteries, complicated by cardiogenic shock**

Ryu Umezono1, Michiya Kageyama2, Miona Arai1, Yuhei Shinoda1, Eikou Maeno1, Souichi Yokokura1, Michiaki Tokura1, Shichiro Abe1

[1]Cardiology, Japanese Red Cross Ashikaga Hospital, Japan

[2]Cardiology, Japanese Red Cross Nasu Hospital, Japan

An 80-year-old female was admitted with cardiogenic shock due to acute coronary syndrome (ACS). Emergency coronary angiography revealed a Medina 1,1,1 true bifurcation lesion with 99% stenosis from the left main trunk (LMT, segment 5) to the ostium of the left anterior descending artery (LAD, segment 6), and 90% stenosis at the ostium of the left circumflex artery (LCx, segment 11). Given her hemodynamic instability, coronary artery bypass grafting (CABG) was deemed high risk, and percutaneous coronary intervention (PCI) was performed under intra-aortic balloon pump (IABP) support.

Intravascular ultrasound (IVUS) revealed a large, eccentric low-attenuation plaque on the LCx-opposite side of the LAD ostium and a circumferential plaque in the LMT. Although the LCx lesion was focal, a calcified nodule opposite the carina and mild plaque extension on the carina side were noted. Despite the wide bifurcation angle, the plaque distribution suggested a high risk of carina shift or plaque shift, potentially compromising the LCx ostium during stenting. We performed pre-kissing balloon inflation (KBI) in both vessels for plaque modification, followed by drug-coated balloon (DCB) angioplasty in the LCx and stenting from LMT to LAD using a single-stent strategy. Proximal optimization technique (POT) was applied. Due to progression of LCx ostial stenosis after stenting, KBI was performed again. Although moderate residual stenosis remained at the LCx ostium, TIMI 3 flow was achieved in both vessels.

This case highlights the procedural complexity of PCI in ACS with LMT bifurcation and cardiogenic shock, requiring tailored strategies for plaque modification, side branch protection, and optimization.