PCI in Calcified Lesions

김병극

연세대학교 의과대학 세브란스 심장혈관병원 심장내과

Coronary calcification still presents unique challenges for percutaneous coronary intervention (PCI) and has the potential risks related with fatal PCI complication. The thorough investigation of these lesions before PCI would be essential for the prevention of complication and the optimized PCI; calcium area, calcium-lumen distance (depth), calcium angle, calcium burden by volumetric quantification. As a result, for stent optimization, the identification of calcification, preparation, treatment, and post-stent evaluation would be the most important. In recent clinical trials targeting complex lesions like chronic total occlusions or diffuse long lesions (the most plaque type would be calcification), image-guided PCI showed the superior clinical outcomes over the conventional angiography-guided PCI. The main mechanism of these findings related with calcification were 1) identification and correction the risks for stent optimization (incomplete apposition or expansion), 2) evaluation of the effectiveness of lesion preparation and determination of the needs for plaque modification, and 3) stent optimization through post-stent evaluation. In addition, to be successful without great effort or related complications, various techniques or devices used in PCI of chronic total occlusion could be helpful. Especially, CTO wires with various designs or tip weight and supporting devices for strong wire back-up and easy wire changes and easy delivery in

calcified lesions could be very useful. In addition, guide extension catheter (for example, GUIDEZILLA™) could provide additional back-up support and facilitate easy delivery of ancillary devices in the heavy calcified tortuous vessels.