NEOINTIMAL COVERAGE OF JAILED STRUT FOLLOWING SINGLE STENTING TO BIFURCATION: OPTICAL COHERENCE TOMOGRAPHY ASSESSMENT FOR 3 TYPES OF DRUG-ELUTING STENTS

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Background: Strut coverage at the side branch orifice (jailed strut) after drug-eluting stent implantation is still to be elucidated.

Methods: Total of 57 true bifurcation lesion treated by single stenting without final kissing inflation using sirolimus-eluting stent (SES) (N=27), paclitaxel-eluting stent (PES) (N=16) and everolimus-eluting stent (EES) (N=14) were analyzed by optical coherence tomography (OCT) at mid-term follow-up after implantation (average 7.6 months: 5 to 12 months). We evaluated neointimal tissue coverage on the jailed strut. Thickness of neointima, tissue surrounding jailed struts and the frequency of thrombus attachment were assessed.

Results: The percentage of uncovered was less in PES compared to SES and EES (49.2% vs 6.8% and 11.6%, P<0.05). Neointimal thickness of jailed strut showed significant difference among three stent types (PES 26.8±37.1μm vs SES 68.2±47.1μm, vs EES 46.0±29.0μm, P<0.01). Whole tissue thickness surrounding jailed struts showed similar tendency (PES 134.3±155.7μm vs SES 321.4±151.5μm, vs EES 174.2±94.5μm, P<0.01). The frequency of thrombus on jailed strut was least in EES (PES 4/16, SES 9/27, EES 1/14, P<0.05).

Conclusions: EES shows the less frequency of uncovered strut and thrombus attachment at jailed struts, suggesting a potential benefit of EES implantation to bifurcation lesion.