IMPACT OF PLAQUE DISTRIBUTION ON SIDE BRANCH COMPROMISE AFTER STENT DEPLOYMENT IN BIFURCATION

i2 Poster Contributions
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Background: In bifurcated lesion, high risk plaque distribution is not fully investigated, affecting side branch (SB) compromise after stent deployment.

Methods: Consecutive 60 non-left-main bifurcated lesions (60 patients) with <50% angiographic stenosis at side branch ostium (SBO), examined by 3D-IVUS in either main vessel (MV) or SB, underwent stent deployment with jailed-wire-technique. Paclitaxel-eluting stent (PES) was only used in this consecutive series. Lumen area (LA), vessel area (VA) and plaque area (PA) were serially measured at 1mm interval from segment 5mm proximal to 5mm distal in MV, and from just ostium to 3mm distal in SB. Proximal or distal average LA, VA, and PA, as well as lumen volume (LV), vessel volume (VV) and plaque volume (PV) were calculated in MV, and same parameters were also analyzed in SB. In proximal or distal site in MV, plaque thicknesses of either ‘the side of SB’ or ‘the opposite side of SB’ were assessed in each point. SB compromise was defined as follow: SBO <50% was aggravated to >75% stenosis in QCA when treated with stenting in MV jailing SBO. Subjects were classified into two groups, SB-compromise-group and non- SB-compromise-group for comparison.

Results: There was no significant difference in patient, lesion, or procedure characteristics. In proximal MV, either mean plaque area (PA) (9.1±3.9 vs. 6.8±2.7 mm²) or plaque volume (PV) (45.7±19.7 vs. 34.2±13.5 mm³) were significantly larger in SB-compromise-group than non-SB-compromise-group (p<0.01). Whereas, in distal MV, no difference was seen between two groups. Proximal plaque thickness of ‘the side of SB’ in SB-compromise-group was significantly larger than that of non-SB-compromise-group (0.83±0.3 vs 0.56±0.3mm;p<0.01). In SB, average vessel area, PA, vessel volume and PV were significantly larger in SB-compromise-group than non- SB-compromise-group

Conclusions: Accumulated plaque relative to proximal ‘the side of SB’ in main vessel or plaque burden in side branch ostium were high-risk plaque distribution to predict side branch compromise after stent deployment.