

Morphological differences in de novo and neoatherosclerotic plaques in stented saphenous vein grafts by OCT (OCTOPUS registry)

OCTOPUS registry investigated the SVG atherosclerosis using optical coherence tomography (OCT) and NIRS/IVUS. METHODS AND RESULTS Stable and ACS patients were enrolled. There were 24 de novo (18 pts) and 8 ISR lesions (8 pts). Time to presentation with ISR was shorter (32 ± 23 vs. 131 ± 63 months, $p < 0.001$) in comparison to de novo lesions. Calcifications were detected only in de novo lesions (42% vs. 0%, $p = 0.028$), and in older graft as compared to noncalcified de novo lesions (162 ± 63 vs. 109 ± 55 months post CABG, $p = 0.037$). Heterogeneous tissue was found only in ISR (38% vs. 0%, $p = 0.02$) and lipid rich tissue with similar frequency in de novo and ISR (50% vs. 67%, $p = 0.39$), with no difference in lipid arc [245 (IQR 164-340) vs. 224 (IQR 175-285), $p = 0.63$] and in the thickness of fibrous cap [85 (IQR 60-110) vs. 75 (IQR 55-95), $p = 0.53$]. Plaque rupture was present in 1 (12.5%) of ISR and 3 (12.5%) of de novo SVG lesions ($p = 1.0$) and thrombus in 1 (12.5%) and 5 (21%) respectively ($p = 0.60$). Intimal tear 1 (4.2%) and tissue friability 4 (17%) was observed only in de novo lesions. Stent malapposition was found in 3 (38%) and uncovered struts in 2 (25%) of ISR of SVG. CONCLUSIONS OCT showed that both ISR and de novo SVG lesions are lipid rich, calcifications only in de novo lesions, conversely, heterogeneous neointima only in ISR. OCT study may suggest that clinically evident ISR might develop earlier as compared to de novo SVG lesions.