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OPTICAL COHERENCE TOMOGRAPHY IMAGING TO EVALUATE CAROTID ARTERY STENTS: SAFETY, FEASIBILITY, AND TECHNIQUE

i2 Poster Contributions

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Background: Optical coherence tomography (OCT) is an increasingly used intravascular imaging modality to assess coronary stents. The new C7 catheter (LightLab Imaging Inc) allows visualization of peripheral arteries up to 10 mm of diameter with high speed pullback. Safety, feasibility, and technique of OCT following carotid artery stenting (CAS) were evaluated.

Methods/Results: OCT was performed in 7 consecutive patients following successful CAS using proximal cerebral protection devices. In all 7 patients OCT pullback was performed occluding the common and external carotid artery and gently hand-injecting 50% diluted contrast at approximately 2ml/sec for 4 seconds. Pullback through the stented segment was started once blood was removed from the artery. At the end of the pullback all injected contrast was aspirated. In the first 3 patients OCT was also performed without vessel occlusion injecting mechanically 16ml of 50% diluted contrast at 4ml/sec. Due to high blood flow in the carotid artery it was impossible to replace all blood and obtain good images. No procedural or in-hospital complications occurred. One patients had transient intolerance to vessel occlusions without any sequels. Obtained images were of good quality and it was possible to detect features as stent geometry and coverage, lack of strut apposition, plaque fracture, and plaque prolaps.

Conclusions: Intravascular OCT under occlusive proximal protection appears feasible and safe to assess stent implantation in carotid arteries.

