

EFFECTS OF STENT DESIGN ON LDL ACCUMULATION AT THE CAROTID ARTERY BIFURCATION

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Abstract:

Restenosis typically occurs in regions of low and oscillating wall shear stress which also favours the accumulation of atherogenic macromolecules such as low-density lipoprotein (LDL). This study aims to determine how stent strut design may affect in-stent restenosis at the carotid artery bifurcation following carotid artery stenting (CAS) by means of computational simulation. LDL concentrations were compared for post-stent carotid and the contralateral models reconstructed from patient-specific images. Our results show that closed-cell stent designs are more likely to create atheroprone and procoagulant flow conditions than open-cell designs due to larger area exposed to high LDL concentration.

Keywords : Stent Design; Carotid Artery Stenting; Low-Density Lipoprotein

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