

11. 8-Year Institutional Review of Carotid Artery Stenting

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OBJECTIVES: Vascular surgeons have increasingly become proficient in carotid artery stenting (CAS) as an alternative treatment modality for cervical carotid artery occlusive disease. We analyzed our early and late outcomes of percutaneous CAS over the last 8 years.

METHODS: Single-center retrospective review of 386 carotid bifurcation lesions treated with CAS and mechanical cerebral embolic protection from May 2001-April 2009. Data analysis includes demographics, procedural records, duplex exams, arteriograms, and 2-view plain radiographs over a mean follow-up time of 20 months (range 1-87 months).

RESULTS: The mean age of the entire cohort is 71 years (82% men and 18% women), 19% were over 80 years of age at the time of treatment, and 31% had a prior history of carotid endarterectomy (CEA) or external beam neck irradiation (XRT). The mean carotid stenosis is 80% and asymptomatic lesions represent 69% of the group. Overall 30-day rates of death, stroke, and myocardial infarction are 0.5%, 1.8% and 0.8%, respectively. The 30-day major/minor stroke rates for analyzed subgroups are statistically significantly different only for recurrent stenosis/XRT versus de novo lesion, 0% and 2.7% ($p=0.038$), but not for asymptomatic versus symptomatic patients, 1.96% and 1.80% ($p=0.45$) and age < 80 versus > 80, 2.0% and 1.4% ($p=0.37$), respectively. At late follow-up, the restenosis rate (defined as > 80% stenosis) is 3.3%. Restenosis rates for recurrent stenosis/XRT versus de novo lesions are 2.7 % and 3.4 % ($p=0.39$) Among the restenotic lesions were 2 associate type III stent fractures in de novo lesions, both of which were closed cell stents. No additional stent fractures have since been identified. The late death rate for the entire group is 14.0% with no stent-related deaths. One stent-related stroke (0.02%) did occur at 19 months.

CONCLUSIONS: Vascular surgeons performing CAS with embolic protection can achieve good early and late outcomes that are comparable to CEA benchmarks. Late stent failures - stroke, restenosis, and/or stent fatigue - while uncommon are a recognized delayed problem.