Carotid artery stenting complications

see Hemodynamic depression.

The potential procedural and peri-procedural complications that may be related to carotid angioplasty and stenting may be categorised as minor or major complications:

A - Minor complications

Carotid artery spasm

Sustained hypotension / bradycardia

Carotid artery dissection

Contrast encephalopathy (very rare)

Minor embolic neurological events (TIAs)

B - Major complications

Major embolic stroke

Retinal artery occlusion

Intracranial hemorrhage

Hyperperfusion syndrome

Carotid perforation (very rare)

Acute stent thrombosis (very rare)

Complications at the site of the vascular access.

The increase in the number of carotid artery stenting (CAS) procedures has necessitated critical appraisal of procedural outcomes and patterns of utilization including cost analysis.

Badheka et al. queried the Healthcare Cost and Utilization Project's Nationwide Inpatient Sample from 2006 to 2010 using the International Classification of Diseases, Ninth Revision, procedure code of 00.63 for CAS. Hierarchical mixed-effects models were generated to identify the independent multivariate predictors of in-Hospital mortality, procedural complications, LOS, and cost of hospitalization. A total of 13,564 CAS procedures (weighted n = 67,344) were analyzed. The overall postprocedural mortality was low at 0.5%, whereas the complication rate was 8%, both of which remained relatively steady over the time frame of the study. Greater postoperative mortality and complications were noted in symptomatic patients, women, and those with greater burden of baseline co-morbidities. A greater operator volume was associated with a lower rate of postoperative mortality and complications, as well as shorter LOS and lesser hospitalization costs. In conclusion, the postprocedural mortality after CAS has remained low over the recent years. Operator volume is an important predictor of postprocedural outcomes and resource utilization [1)].

Perioperative incidence of stroke (0.9%), myocardial infarction MI (0.6%), and death (1.1%) [2].

Adding a distal filter and blood aspiration to flow reversal during CAS could provide effective distal embolic protection [3].

The radial artery is an effective and safe method in stenting of carotid arteries. In patients with high risk of haemorrhagic complications from the side of the vascular approach and with difficult anatomy of the aortic arch and its branches, hampering catheterization of the carotid artery via the femoral artery approach, the radial artery may be considered as an advantageous site of access [4].

1)
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2)
Dumont TM, Wach MM, Mokin M, Sorkin GC, Snyder KV, Hopkins LN, Levy EI, Siddiqui AH. Perioperative complications after carotid artery stenting: a contemporary experience from the university at buffalo neuroendovascular surgery team. Neurosurgery. 2013 Oct;73(4):689-93; discussion 693-4. doi: 10.1227/NEU.0000000000000077. PubMed PMID: 23842555.
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4)
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