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The effect of carotid stent flushing during carotid artery stenting on the delayed embolic events

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Aim: Aim of this study is to present the results of a modified technique of carotid artery stenting (CAS) which include post-deployment flushing of the inner stent surface in order to reduce delayed neurological events.

Methods: From May 2015 to July 2017, 64 patients underwent CAS transfemorally. There were two groups, one with flushing (group A1, n=33) and one without (group A2, n=31). Open cell stents and distal protection were used in all cases. A total of 81% of patients were symptomatic in each group. In group A1, a total of 80 ml of heparinized saline was flushed to rinse the stent surface after deployment and prior to filter removal. All patients received dual anti-platelet therapy for six months post-procedure. MRI was performed 24 h post-operatively and a neurologist assessed all patients' pre-procedure, at 24 hours, and at 30 days post-procedure. Filters were collected and visual classification for embolic material was performed.

Results: One major stroke occurred in group A1 and two in group A2. No TIAs occurred in group A1, whereas 6 TIAs were recorded in group A2. There were no deaths and no patient required ICU stay. Post-procedural DW-MRI revealed 25 ipsilateral embolic signals in group A1 and 100 in group A2. Visual classification indicated increased filter content in group A1.

Conclusion: These series suggests that a modified CAS technique with filter-protected saline rinsing of the stent is a safe and effective adjunct that reduces post-procedural neurological morbidity and mortality. Further studies are needed to confirm these results.

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