Tandem occlusion

A tandem occlusion is an uncommon presentation of acute ischemic stroke that involves occlusion of the extracranial internal carotid artery (EICA) and concomitant occlusion of either the intracranial internal carotid artery and/or middle cerebral artery.

Tandem lesions (e.g. carotid siphon and bifurcation stenosis): although this topic remains controversial, CEA in patients with tandem occlusions has not been associated with increased postoperative stroke rates. [1) 2)].

Treatment

Tandem occlusion treatment.

Case series

Limaye et al. analyzed a retrospective database of Carotid artery stenting (CAS) patients from the University of Iowa Hospitals and Clinics. They included patients with symptomatic isolated ipsilateral extracranial carotid artery stenosis and acute tandem occlusions who underwent CAS. Hyperacute CAS (HCAS) and acute CAS (ACAS) groups were defined as CAS within 48 hours and >48 hours to 14 days from symptoms onset, respectively. The primary outcome was a composite of any stroke, myocardial infarction, or death at 3 months of follow-up. Secondary outcomes were periprocedural complications and restenosis or occlusion rates.

They included 97 patients, 39 with HCAS and 58 with ACAS. There was no significant difference between groups for the primary outcome (HCAS 3.3% vs. ACAS 6.1%; p = 1). There were no differences in the rate of perioperative complications between groups although a trend was observed (HCAS 15.3% vs. ACAS 3.4%; p = .057). The rate of restenosis or occlusion between groups (HCAS 8.1% vs. ACAS 9,1%; log-rank test p = .8) was similar with a median time of follow-up of 13.7 months.

Based on this study, CAS may be feasible in the hyperacute period. However, there are potential higher rates of perioperative complications in the hyperacute group, primarily occurring in mechanical thrombectomy (MT) patients with acute tandem occlusion. A larger multicenter study may be needed to further corroborate this findings [3)].

Case reports

A 70-year-old man was admitted to the hospital due to sudden inability to speak and inability to move his right limb for 3 h. Imaging confirmed a diagnosis of a tandem occlusion in the left carotid artery with a left M1 occlusion. Carotid artery incision thrombectomy combined with stent thrombectomy was performed. The operation was successful, and 24 h later the patient was conscious and mentally competent but had motor aphasia. His bilateral limb muscle strength level was 5, and his neurologic severity scores score was 2.

Carotid artery incision thrombectomy combined with stenting for carotid artery plus cerebral artery tandem embolization is clinically feasible. For patients with a complicated aortic arch and an extremely tortuous carotid artery, carotid artery incision can be chosen to establish the interventional path [4].

1)
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