Posterior circulation stroke

Acute basilar artery occlusion (BAO) is the most devastating form of Posterior circulation infarction (PCI)

Hevia-Rodríguez P, Equiza J, Alonso-Lacabe M, de Goñi-García I, Sampron N. Posterior Circulation Ischemic Stroke Due to Bilateral Petroclival Meningiomas. Neurology. 2023 Aug 14:10.1212/WNL.0000000000207638. doi: 10.1212/WNL.0000000000207638. Epub ahead of print. PMID: 37580159.

Hirai et al. aimed to investigate the impact of baseline infarct area and collateral status (CS), which are imaging predictors of clinical stroke outcome, after endovascular treatment (EVT) in MRI-selected patients with acute basilar artery occlusion (BAO).

Patients with acute BAO who underwent EVT within 24 h after stroke from December 2013 to February 2021 were included in a retrospective, multicenter, observational study. The baseline infarct area was evaluated by the posterior circulation of Acute Stroke Prognosis Early Computed Tomography Score (PC-ASPECTS) using Diffusion-weighted magnetic resonance imaging (DWI), and CS was assessed by measuring the computed tomography angiography of the basilar artery (BATMAN) score and the posterior circulation collateral score (PC-CS) using magnetic resonance angiography (MRA). A Good outcome was defined as a modified Rankin scale score ≤ 3 at 3 months. For each imaging predictor, a multivariate logistic regression analysis was performed to evaluate its impact on good outcomes.

A total of 86 patients were analyzed, and 37 (43.0%) had a good outcome. The latter showed significantly higher pc-ASPECTS than those without good outcomes. In multivariate analyses, a pc-ASPECTS ≥ 7 was significantly associated with good outcomes (OR, 2.98 [95% CI, 1.10-8.13], P = 0.032), while PC-CS ≥ 4 (OR, 2.49 [95% CI, 0.92-6.74], P = 0.073) and BATMAN score ≥ 5 (OR, 1.51 [95% CI, 0.58-3.98], P = 0.401) were not.

In MRI-selected patients with acute basilar artery occlusion (BAO), pc-ASPECTS on DWI was an independent predictor of clinical outcomes after EVT, while the MRA-based CS assessments were not [1)].

Posterior circulation stroke can have diverse presentations that differ from strokes in anterior circulation in relation to etiology, clinical features, and prognosis.

Posterior circulation stroke can present with vertigo, ataxia, vomiting, headache, cranial nerve abnormalities, bilateral long tract neurological signs, “locked in” syndrome or impaired consciousness, and complex ocular signs or cortical blindness. The intracranial portion of posterior circulation is much more prone to atherosclerosis as compared to anterior circulation. Posterior circulation strokes account for approximately 20% of all strokes, with high mortality and morbidity [2)]

The prevalence of headache after ischemic stroke is high in China. In addition, women, presence of

midbrain lesions, posterior circulation stroke and a history of migraine were high-risk factors for ischemic stroke-related headaches [3].

Cervical spondylosis (CS) is reported to be associated with vertebrobasilar insufficiency. However, few cohort studies have investigated the association between CS and posterior circulation ischemic stroke.

The study cohort comprised 27,990 patients aged ≥18 years with a first diagnosis of CS. The controls consisted of patients with propensity score matched for age, sex, and comorbidities at a ratio of 1:1.

Lin et al. investigated the relationships of CS with ischemic stroke and all-cause mortality. Cox regression was used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs). The average follow-up duration was 6.13 (SD = 3.18) and 6.07 (SD = 3.19) years in the CS and non-CS cohorts, respectively.

The mean age of CS patients and non-CS patients was 54.9 ± 13.4 and 55.1 ± 14.9 years. Fifty-eight point five percent of CS patients and 59.2% of non-CS patients were women. CS patients were 1.46 folds more likely to develop a posterior circulation ischemic stroke (95% CI, 1.23-1.72) than non-CS patients. CS patients with myelopathy exhibited a 1.50-fold risk (95% CI, 1.21-1.86) of posterior circulation ischemic stroke compared with non-CS patients; CS patients without myelopathy were at a 1.43-fold risk (95% CI, 1.18-1.73) of posterior ischemic stroke compared with non-CS patients. The risk of posterior ischemic stroke was non-significant between non-CS patients and CS patients who had received spinal anterior decompression (adjusted HR, 1.66; 95% CI, 0.78-3.52), while receiving posterior decompression was associated with a 4.23-fold risk of posterior ischemic stroke (95% CI, 1.05-17.0).

This population-based study showed that CS is associated with an increased risk of posterior circulation ischemic stroke. Surgical posterior decompression was associated with the highest risk of posterior ischemic stroke [4].

1)
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