Acute treatment of symptomatic intracranial internal carotid stenosis

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Introduction: Nowadays, stroke centres use extensive imagiological data to support hyperacute treatment of stroke. Although simple CT scan is enough to decide intravenous treatment, endovascular procedures obligate an angio-CT documenting an occlusion and some centres use perfusion CT to show a small core of infarct. Hyperacute treatment of symptomatic carotid stenosis is controversial, even more when referring to intracranial segments.

Case Report: A 57-year-old woman, with multiple cardiovascular risk factors, was admitted to our emergency department one day after an elective surgery. She clinically presented a right total anterior circulation infarction with 5 hours and 30 minutes of evolution (anosognosia, right conjugate eye deviation, left homonymous hemianopia, hemiparesis grade 3 and hemisensory loss), scoring 12 on NIHSS. The brain CT scan was normal. The CT angiogram showed a slight reduction in the diameter of the right carotid bulb and apparent severe stenosis of the cavernous segment of the internal carotid artery. CT perfusion revealed an elevated mean transit time with no apparent lesion on cerebral blood volume. First, we tried to improve perfusion with dopamine, but neurological deficits remained stable. After 1 hour and 30 minutes, we performed angioplasty with stenting of the cavernous segment of the internal carotid artery resulting in a frank improvement of symptoms. The final outcome revealed only a left hemiparesis (grade 4) with an NIHSS of 2.

Conclusion: Although controversial, acute endovascular treatment of intracranial symptomatic stenosis may be an option when best medical treatment is not feasible.