Middle cerebral artery thrombectomy plus carotid stenting or postponed carotid endarterectomy: which is the best approach in acute stroke treatment?

Ana Luísa Rocha¹, Pedro Abreu¹², Pedro Castro¹², and Elsa Azevedo¹²

Introduction: While performing endovascular techniques for middle cerebral artery (MCA) recanalization in hyperacute stroke, there is some controversy regarding immediate stenting of a concomitant carotid stenosis, or postponing for endarterectomy in a more stable clinical condition within the first 2 weeks since symptom onset. Aiming to raise discussion around this issue, we present two acute stroke clinical cases where both attitudes could be considered.

Case Reports: Case 1: 57-year-old male, previously anticoagulated (rivaroxaban 20mg) for deep venous thrombosis, presented right MCA occlusion symptoms, scoring 15 on NIHSS. Angio-CT scan showed right ICA stenosis, and a thrombus in the right MCA M1 segment. Due to anticoagulation, the patient was immediately selected for thrombectomy (Thrombolysis in Cerebral Infarction (TICI) 2b), with an end-of-procedure NIHSS score of 8. Duplex ultrasound confirmed a 75% ICA atherosclerotic stenosis. The patient was discharged to his reference hospital with indication for endarterectomy, scoring 3 on NIHSS. Case 2: 59-year-old female presented with left MCA occlusion symptoms, scoring 12 on NIHSS. Angio-CT showed occlusion of left ICA and MCA (M1 segment). We performed thrombolysis followed by MCA thrombectomy (TICI 3), with an end-of-procedure NIHSS score of 19; angiography showed a sub-obliterative ICA stenosis (>90%) at the end of the procedure (occlusion opened by the thrombectomy catheter passing through?), also observed in a duplex ultrasound exam. NIHSS subsequently improved to 4, and a successful endarterectomy was performed 7 days after admission.

Conclusion: Although we decided to postpone carotid stenosis treatment, using later endarterectomy instead of immediate endovascular treatment during the thrombectomy procedure, doubts were raised regarding the best approach. We suggest a systematic register of these cases in a multicentre study, to gather more information that might lead to supported decisions, as there are no current specific guidelines addressing this issue.