Acute ischemic stroke due to isolated intracranial dissection with aneurysmal dilatation: Does everyone know what to do?

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Abstract

Background: An isolated intracranial dissection is rare cause of stroke and presents as a therapeutic dilemma in the acute setting. The association with an aneurysmal dilatation increases the risk of bleeding, making the decision to perform any acute treatment even more challenging. Currently there are no consensus on how to treat these patients.

Clinical case: A 37-year-old woman, active smoker and with history of migraine without aura, was admitted in the emergency department 45 minutes after the onset of a sudden left hemiparesis. Presence of facial asymmetry and occipital headache in the previous week were latter reported. At examination the patient presented a left hemiparesis with ipsilateral sensory impairment and dysarthria (NIHSS 9). MRI showed an acute and subacute right lenticulostriate ischemic infarct and a right MCA dissection with a partially thrombosed aneurysmal dilatation. There was no MCA occlusion and the pseudoaneurysm wall showed contrast enhancement in T1-weighted images. MR perfusion imaging revealed a hypoperfusion in the right MCA territory. Due to an established subacute infarct and an aneurysmal dilatation with high-risk of rupture, intravenous thrombolysis was withheld. After multidisciplinary discussion, the patient was treated with endovascular coiling and permanent stenting, without immediate complications. At 3-months, the modified Rankin Score was 2, but after the onset of temporal headaches, imaging disclosed a pseudoaneurysm growth, and a new endovascular treatment was performed.

Conclusion: While some experts’ opinion proposes that intravenous thrombolysis should not be withheld in ischemic stroke due to intracranial dissection, the presence of concomitant aneurysmal dilatation raises additional safety concerns. Due to the high-risk of rupture, dissecting aneurysms may benefit from early endovascular treatment.