

Unexpected Early Reocclusion After Successful Mechanical Thrombectomy in Acute Ischemic Stroke : A Case Report

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Purpose:

Sustained successful reperfusion is an important prognostic factor for a favorable clinical outcome in acute ischemic stroke. Despite achieving successful recanalization, between 2% and 20% of patients experience reocclusion of the treated vessel, which is associated with unfavorable prognosis. We present a case of early reocclusion after an initially successful mechanical thrombectomy for vertebral artery occlusion.

Methods:

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Results:

A 49-year-old man with a history of hypertension, diabetes and a prior cerebral stroke history presented with left-sided weakness and dysarthria over several days, with a National Institutes of Health Stroke Scale (NIHSS) score of 6. Ten years ago, he underwent a decompressive suboccipital craniectomy and lobectomy for a right cerebellar infarction. Additionally, he had recently been treated with the combination of aspirin and clopidogrel for acute infarction in the left thalamus, brainstem, occipital and both cerebellar hemispheres for 2 months at another hospital.

Magnetic resonance imaging (MRI) revealed acute infarction in the brainstem and bilateral cerebellum again and non-visualization of the right vertebral artery (VA). Intravenous thrombolysis was not performed due to the onset of ischemic stroke symptom being more than 4.5 hours. Digital subtraction angiography revealed thrombus occlusion in the right V4 VA and chronic occlusion in left V4 VA with collaterals via small branches from the left V3 VA to basilar artery.

Despite conservative treatment, the patient's neurologic symptoms deteriorated, with a NIHSS score of 8. As a result, endovascular thrombectomy was performed, and complete recanalization was achieved using

the combination of aspiration twice and three passes of the Trevo stent retriever. Angiography after thrombectomy revealed luminal irregularity in the right V4 segment, suggestive of dissection, which was treated with Enterprise stent deployment.

However, on the day following the intervention, the patient presented with altered consciousness, and the NIHSS score worsened to 15. MRI showed reocclusion in the right V4 segment, prompting immediate endovascular thrombectomy. This time, complete recanalization was achieved with three aspiration passes and one pass of the Trevo stent retriever, in addition to balloon angioplasty.

After the intervention, intravenous alteplase was administered to prevent reocclusion; however, it was discontinued because of bleeding from the mouth and nose. Eventually, six hours after the intervention, the NIHSS score deteriorated to 32 and the patient's family opted for conservative treatment without additional procedures due to cost concerns. Consequently, the patient was transferred to a nursing home with a Modified Rankin Score of 5.

Conclusions:

Early reocclusion within 24 hours after successful mechanical thrombectomy is rare but associated with poor outcome. The higher number of passes for recanalization and the presence of missed residual thrombotic fragments or stenosis at the primary occlusion site may have contributed to reocclusion. This risk could potentially be minimized by conducting a careful re-evaluation using delayed angiography.