Failed thrombolysis in a 56-year-old aphasic and hemiplegic patient, what's next?

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ABSTRACT

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CASE REPORT

A 56-year-old male presented to the emergency department of a tertiary care neurology centre with acute onset of severe global aphasia and complete paralysis of right lower face, arm and leg. National Institutes of Health Stroke Scale (NIHSS) score was 14. Initial computed tomography (CT) revealed hyperdense left middle cerebral artery (MCA) (Figure 1A) and computed tomography angiography (CTA) confirmed MCA – M1 segment occlusion (Figure 1B) with minimal pial collaterals (Figure 1C). Patient fulfilled criteria for intravenous thrombolysis and alteplase was initiated within 90 minutes of symptom onset.

No clinical improvement was observed after 40 minutes. Consent was obtained to attempt intra-arterial intervention. Mechanical thrombectomy was performed 130 minutes from symptom onset using the TREVO[®] microcatheter (Stryker Neurovascular, CA, USA) (Figure 1E). A long clot was retrieved (Figure 1D). Clinically, the patient experienced immediate improvement in language and strength. Angiography also revealed a 53% left ICA stenosis for which he underwent endarterectomy four days later. Follow-up brain magnetic resonance imaging

Figure 1: (A) Computed tomography scan of the brain showing hyperdense left middle cerebral artery, (B) Computed tomographic angiography showing complete occlusion of MCA–M1 segment, (C) Computed tomographic angiography showing minimal pial collaterals on the left side, (D) The actual clot that was retrieved, (E) TREVO[®] stent retriever, Stryker Neurovascular (2014), and (F) Magnetic resonance imaging scan showing ischemic infarcts in the territory of the left middle cerebral artery.

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Received: 16 September 2015

Accepted: 09 October 2015

Published: 01 December 2015

(MRI) showed multiple ischemic infarcts in left MCA territory with slight hemorrhagic transformation (Figures 1F). Patient was discharged home 11 days after admission with a NIHSS score of 3.

DISCUSSION

In patients with proximal MCA occlusion (such as ours), the rate of recanalization with intravenous thrombolytic therapy alone has been reported to be less than 30%. [1] Recent efforts have provided strong evidence for a benefit of thrombectomy on functional

outcome. [2] Our patient is a 56-year-old individual who would have likely remained with severe deficits following IV thrombolysis alone. This case shows the highly promising impact of intra-arterial therapy and the relevance of early vessel imaging to identify patients who could benefit from such therapy.

CONCLUSION

It is expected that this procedure will become, in addition to IV thrombolysis, the standard of care for patients with acute ischemic stroke and a proximal occlusion.

Keywords: Aphasia, Intra-arterial treatment, Stroke, Thrombectomy

How to cite this article

Gauquelin L, Audet Marie-Ève, Camden Marie-Christine, Laforce Jr R. Failed thrombolysis in a 56-year-old aphasic and hemiplegic patient, what's next? Int J Case Rep Images 2015;6(12):780–782.

doi:10.5348/ijcri-201536-CL-10091

Acknowledgements

We would like to acknowledge the patient who kindly accepted that we publish his history. We also thank Mrs Audrey Paradis for her great help preparing this paper.

Author Contributions

Laurence Gauquelin – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Marie-Ève Audet – Acquisition of data, Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Marie-Christine Camden – Acquisition of data, Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Robert Jr Laforce – Substantial contributions to conception and design, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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