All roads lead to brain: mechanical thrombectomy via the transbrachial approach in a patient with type A aortic dissection

Filipa Proença¹, Francisco Raposo¹, João Brandão Madureira¹, Catarina Campos², Pedro Teotónio¹, and Lia Neto¹

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Abstract

Introduction: Endovascular thrombectomy (EVT) has proven to be an effective treatment for proximal occlusions of the major intracranial arteries in stroke patients, improving outcomes. Several risk factors can preclude a traditional transfemoral approach such as vascular anatomy, peripheral vascular disease or aortic dissection. In these situations, alternatives to gain vascular and thrombus access are crucial. We report a case of acute basilar occlusion where a transbrachial approach to revascularization was used due to an aortic dissection.

Case presentation: A 47-year-old Caucasian male patient, with a previous history of a type A aortic dissection and aortic aneurysm, presented to the emergency department with a basilar occlusion syndrome, with National Institutes of Health Stroke Scale (NIHSS) of 24. In the admission CT scan, the posterior circulation Alberta Stroke Program Early CT Score (PC-ASPECTS) was 10 and CT-angiography revealed a mid-basilar thrombus. There was also a dissection extending between the aortic arch and the left common carotid artery and a right vertebral artery ending in the ipsilateral posterior inferior cerebellar artery. Emergent EVT was performed with stent retriever, using a brachial approach, achieving a thrombolysis in cerebral infarction (TICI) 3 score and an NIHSS of 0.

Conclusion: Although transfemoral access remains the most frequent approach to acute stroke EVT, if contraindicated, alternative routes should be used to gain vascular access and optimize delivery of thrombectomy devices. Future studies should focus on early and effective triage of patients most likely to require alternative approaches to reduce their morbidity and mortality rates.