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INSTRUMENTAL ROLES OF MICROSURGERY AND ENDOVASCULAR THERAPY IN MULTIMODAL MANAGEMENT OF GIANT CEREBRAL ANEURYSMS

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Introduction Giant intracranial aneurysms are rare vascular lesions consisting of aneurysms measuring ≥ 25 mm in diameter. These aneurysms arise in specific regions within the circle of Willis, as they tend to be located where they can grow and remain asymptomatic without rupturing for many years. Their formation is the result of multiple factors including their association with a unique genomic landscape.

Methods We performed a systematic review of the literature through the PubMed, Scopus and, Web of Science databases according to PRISMA guidelines. We aimed to identify prior reports involving multimodality management of giant intracranial aneurysms. Specifically, we sought to highlight the integral role of both neuroendovascular and microsurgical interventions in treatment of these rare vascular lesions.

Results 10 studies reporting outcomes for 91 patients were included in this meta-analysis. Mean age varied from 39.0 to 60.1 years. Many were found extending off of the supraclinoid ICA. Overall mortality rate associated with multimodal management of 5.4% was noted. Radiographic obliteration rates were reported in 3/10 studies included. Further, 1 study reported an 82.9% rate of successful obliteration, while the remaining studies achieved 100% rates of obliteration across 15 patients in total. Bypass patency rates ranged from 94.3% to 100%. Rates of good outcomes (mRS 0–2, GOS 4–5) ranged from 60% up to a maximum of 87.5%.

Conclusion Combined, multimodality endovascular and microsurgical treatments appear to be most successful for the treatment of giant aneurysms because of their adaptability, the flexibility they confer, and the synergistic effect of combining the strengths of multiple modalities.

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TREVO 3 MM AND/OR AXS CATALYST 5 FOR THE TREATMENT OF MEDIUM DISTAL VESSEL OCCLUSION STROKE – A SUB ANALYSIS OF THE ASSIST REGISTRY

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Background The effect of endovascular therapy (EVT) on the outcome of stroke patients with a medium distal vessel occlusion (MDVO) is unclear. We report the results of MDVO patients treated with the 3 mm Trevo stent retriever (SR) and/or the AXS Catalyst 5 distal access catheter.

Methods Data was derived from a prospective, multicenter global registry which enrolled patients treated with operator preferred EVT technique at 71 hospitals from January 2019 to January 2022. Three techniques were assessed: SR classic, direct aspiration, and a primary combined approach. Additional inclusion criteria were (a) EVT performed with the 3 mm Trevo SR and/or AXS Catalyst 5 distal access catheter on the first pass and (b) an occlusion of the M2 segment or M3 segment of the middle cerebral artery or the A1, A2 or A3 segment of the anterior cerebral artery. The primary outcome was achieving an expanded Thrombolysis in Cerebral Infarction (eTICI) score of 2c or 3 on the first pass, with the primary technique as adjudicated by core lab. The primary clinical outcome measure was a 90-day modified Rankin Scale (mRS) score of 0–2.

Results A total of 155 patients (10.3% of the Registry population) were included. Most patients had an M2 occlusion (93.5%). First pass eTICI reperfusion was achieved in 43.1% of the patients. No modifying effect of the frontline technique was found. The rate of mRS 0 – 2 (overall 65%) did also not differ between groups.

Conclusion The data suggests that the Trevo 3 mm SR and/or the AXS Catalyst 5 are safe and effective devices for performing EVT of M2 occlusions. Further improvements are needed regarding materials and techniques to improve reperfusion results in this patient cohort in the future.

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