

E-027

MANAGING UNRUPTURED CEREBRAL ANEURYSMS DETECTED DURING MECHANICAL THROMBECTOMY OF ACUTE ISCHEMIC STROKE: CONSIDERATIONS FOR TREATMENT DECISIONS

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Background Cerebral aneurysms encounter during mechanical thrombectomy for ischemic stroke can pose a management challenge. Those aneurysms can increase the risk profile of mechanical thrombectomy while carrying a higher risk of rupture intra and post procedurally. The aim of this review is to elucidate practice approaches for patients undergoing mechanical thrombectomy with underlying intracerebral aneurysms.

Methods A search on EMBASE, PUBMED, Google Scholar and SCOPUS. The search algorithm was 'Mechanical Thrombectomy' AND 'Stroke' AND 'Aneurysm' with dates set from 2000 to 2022. The reference lists of selected articles were reviewed for potential citations. Outcomes of interest included rates of procedural rupture, underlying mechanism of stroke, aneurysm treatment strategies.

Results Sixteen reports were included in the review. A total of 33 patients were identified with aneurysms detected during mechanical thrombectomy. 20 aneurysms were within or immediately proximal to the target vessel for mechanical thrombectomy, 9 of which had procedural rupture. Mechanism of stroke was thought to be extension of spontaneous thrombosis in 8 cases. Use of an aspiration first approach as opposed to SR was suggested as possible technique that may mitigate hidden aneurysm rupture.

Conclusion Aneurysm rupture during mechanical thrombectomy is associated with significant mortality and morbidity. Although rare, spontaneous aneurysm thrombosis is a potential mechanism of stroke and can carry an increased risk of aneurysmal rupture. Mechanisms of procedural rupture include stentriever or wire manipulation in an occult aneurysm and tractional forces in areas of aneurysm adhesion. Aspiration alone and the use of J shaped wires are technical considerations that can potentially decreased the possibility of aneurysm rupture in mechanical thrombectomy.

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E-028

MIDDLE MENINGEAL ARTERY EMBOLIZATION USING ZOOM™45 ASPIRATION CATHETER: AN EARLY SINGLE-CENTER EXPERIENCE

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Background Middle meningeal artery (MMA) embolization for subdural hematomas has gained momentum in the neuroendovascular space. However, there is variability in the technique for safe and effective embolization.

Methods This is the first report describing the technical feasibility and performance of using the Zoom™ 45 Aspiration

Catheter (Imperative Care, Inc., Campbell, CA) for MMA access to facilitate embolization from February 2021 to March 2023 in a single-center institution.

Results A total of 30 patients were included (mean age: 64.4 ± 26.5 years; male sex: 77.3% [22/30]; Black: 57.1% (16/28). Approximately 36.7% had a history of head trauma (11/30). Fifteen patients (51.7%, 15/29) were either on antiplatelet therapy, anticoagulant therapy, or both. Thrombocytopenia with less than 100,000 platelets per microliter and supratherapeutic international normalized ratio (INR) with INR greater than 2 was seen in 23.3% (7/30) and 13.3% (4/30) of patients, respectively. We used the Zoom™ 45 Aspiration Catheter in all cases of embolization for subdural hematomas with technical success achieved in 100.0% (30/30) of cases, with selective embolization utilizing microcatheter directly into frontal and parietal branches for all patients. Identification of dangerous collaterals, such as lacrimal and petrous branches, prior to embolization, was achieved in all patients (100.0%, 30/30). Bilateral or single MMA embolization was done in 53.3% (16/30) and 46.7% (14/30) of patients, respectively. We used the transradial approach in 53.3% (16/30) of patients, and the transfemoral approach in 46.7% (14/30) of patients. The most common embolization material was n-butyl cyanoacrylate (n-BCA) (90.0%, 27/30), followed by combination of n-BCA and coils (10.0%, 3/30). There were no access site complications or complications related to the MMA embolization procedures and used devices.

Conclusions The use of Zoom™ 45 Aspiration Catheter seems to be technically feasible, safe, and effective for facilitating MMA access for embolization in the context of subdural hematomas.

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E-029

THROMBECTOMY IN STROKE PATIENTS WITH LOW ASPECTS: IS TICI 2C/3 SUPERIOR TO TICI 2B?

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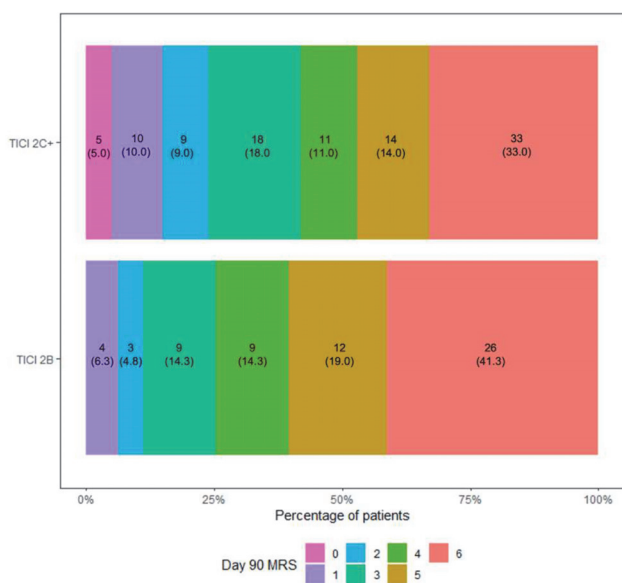
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Introduction/Purpose the procedural success of mechanical thrombectomy (MT) has been traditionally defined by a final thrombolysis in cerebral infarction (TICI) score of 2B/3. However, several studies have shown that patients with a TICI score of 2C and 3 have a significantly better outcome than those with a TICI score of 2B. This retrospective cohort study aimed to compare the outcomes of patients with low Alberta Stroke Program Early Computed Tomography Score (ASPECTS) (2-5) who achieved TICI 2B versus those who achieved TICI 2C/3 after MT in the early and late time window periods.

Materials and Methods This study utilized data from the Stroke Thrombectomy and Aneurysm Registry (STAR), which combined databases from 32 thrombectomy-capable stroke centers between 2013 and 2023. The study included only patients with low ASPECTS who achieved TICI 2B, 2C, or 3 after MT for internal carotid artery (ICA) or middle cerebral artery (M1) stroke.

Results Of the 10,081 patients who underwent MT, 309 met the inclusion criteria. Of these, 138 (44.6%) achieved TICI 2B, and 171 (55.4%) achieved TICI 2C/3. There were no significant differences in baseline characteristics between the two groups. The 90-day favorable outcome (Modified Rankin Score [mRS]: 0-3) was significantly better in the TICI 2C/3 group than in the TICI 2B group (42.0% versus 25.4%; $P=0.047$). After adjusting for Age, NIHSS, intravenous tPA administration, total attempts, distal embolization, successful recanalization, symptoms onset to groin puncture, and ICA involvement, binary regression analysis revealed that achieving TICI 2C/3 was significantly associated with higher odds of a favorable 90-day outcome (OR 3.30; 95% CI 1.24-9.51; $P=0.02$).

Conclusion In patients with low ASPECTS, achieving a TICI 2C/3 score after MT is associated with a more favorable 90-day outcome. These findings suggest that TICI 2C/3 is a better target for MT than TICI 2B in patients with low ASPECTS.



Abstract E-029 Figure 1

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E-030 INCIDENCE AND RISK FACTORS FOR NEW SEIZURE AFTER ISCHEMIC STROKE IN A SINGLE INSTITUTION SERIES

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Introduction New onset seizures are an uncommon, but morbid sequelae of acute ischemic stroke. The reported incidence has a wide range, as studies on the topic vary significantly in inclusion criteria. Similarly, heterogeneity in studied patient populations has led to a lack of consensus on risk factors. Here we report the incidence and risk factors of new onset seizure after ischemic stroke in a single institution.

Methods We retrospectively identified all patients who were admitted to Harborview Medical Center with a diagnosis of ischemic stroke from 2018 to 2022. Pediatric patients and patients with a history of seizures were excluded from analysis. Patient charts were then reviewed for clinical history, etiology of stroke, characteristics of stroke, including size and location, severity of stroke by NIHSS at admission, treatment of stroke, presence of hemorrhagic transformation, and post-stroke seizure development.

Results A total of 1307 patients met inclusion criteria, with a median age of 69 (18-101). Forty-two percent of patients were female. The incidence of post-stroke seizures was 8.5%. The incidence of early (≤ 7 days) and late (>7 days) onset post-stroke seizures was 4.7% and 4.6%, respectively. On univariate analysis, age ($p<0.01$), presence of hemorrhagic transformation ($p=0.02$), and type of hemorrhagic transformation ($p=0.01$) were significantly associated with development of post-stroke seizures. The type of hemorrhagic conversion driving the association was intraparenchymal hemorrhage (IPH); petechial hemorrhage was not significantly predictive of post-stroke seizures ($p=0.46$).

Discussion The literature on new onset seizures after stroke describes a range of incidences and risk factors, as there is variation in the studied populations. Here we report the incidence of post-stroke seizures in all patients diagnosed with ischemic stroke in a 3-year period. The most significant predictor was hemorrhagic transformation, and this was driven by IPH.

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