Introduction Mechanical thrombectomy for acute ischemic large vessel occlusion has varying degrees of catheterization and access difficulties based on anatomical and intravascular differences. The aim of this study was to assess the factors involved in prolonged puncture to reperfusion times in radial and femoral access in anterior circulation large vessel occlusions.

Methods We retrospectively compared transradial and transfemoral access for acute ischemic stroke at two high-volume comprehensive stroke centers from 1/1/2020–6/30/2021. Patient characteristics, demographics, B.A.D scores, and procedure details were collected. Patients requiring crossover between access sites were excluded, and femoral and radial access was analyzed separately. The 75th percentile was used to determine which patients had prolonged puncture to reperfusion time (PTR). Univariate analysis was used to determine factors associated with these cutoffs. A good clinical outcome was defined by NIHSS < 8 on discharge and at 24 hours post-thrombectomy. Univariate analysis used Wilcoxon rank-sum test for continuous outcomes, while chi-square test and Fisher’s exact test were used for categorical comparisons. Significance was defined as p < 0.05.

Results A total of 235 patients were analyzed, 178 (75.7%) of which had transfemoral access. In the transfemoral cohort, the mean PTR time was 31.95 min (sD 24.06 min, 75th percentile = 33), while the transradial cohort had a mean PTR of 33.81 min (sD 30.58, 75th percentile = 40 min). Prolonged PTR was not associated with significantly different clinical outcomes in either cohort. In the transfemoral cohort, a B.A.D. score of >/= 2 was more common in prolonged PTR time than a non-prolonged PTR (18 (40%) vs 25 (21%), p = 0.027, respectively), which was not observed in the transradial cohort (Table 3). Univariate predictors of transfemoral prolonged PTR included B.A.D. scores >/= 2 (OR = 2.45 [1.16, 5.17], p = 0.018), tandem occlusion (OR = 4.44 [1.85, 10.9], p < 0.001), and > 2 passes (OR = 10.2 [4.42, 25.1], p < 0.001) (Table 2). In the transradial cohort, only > 2 passes was a univariate predictor of prolonged PTR (OR = 3.68 [1.10, 14.8], p = 0.045) (Table 4).

Conclusion In patients undergoing femoral access for mechanical thrombectomy of anterior circulation occlusions, a prolong puncture to reperfusion time is associated with higher B.A.D scores, tandem occlusion, and > 2 passes. While radial access only >2 passes was associated with a prolonged puncture to reperfusion time. Future research should evaluate these effects in larger patient populations with more robust consideration of anatomical and intravascular variation.


E-087 COST COMPARISON: EVALUATING TRANSFEMORAL AND TRANSRADIAL ACCESS FOR DIAGNOSTIC CEREBRAL ANGIOGRAPHY

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Background Modern medicine necessitates the delivery of increasingly complex healthcare while minimizing cost. Transradial access (TRA) for neuroendovascular procedures is becoming more common as accumulating data demonstrate fewer complications, improved patient satisfaction, and high rates of treatment success compared to the transfemoral (TFA) approach; however, the disparities in cost, if any, between these approaches remain unclear. We sought to compare supply & equipment costs between TRA and TFA for diagnostic cerebral angiography and evaluate the specific items that account for these differences.

Methods We retrospectively reviewed all adult patients who underwent diagnostic cerebral angiography from July 1, 2019 to December 31, 2019. Data related to patient demographics, vascular access site, catheters used, cost of catheters, arterial access sheath utilization, cost of sheaths, closure devices used, and cost of closure devices were collected.

Results The transradial approach resulted in higher price of radial access sheath and increased number of closure devices utilized; however, the overall cost of closure devices was much lower in TRA group than in the TFA cohort. Overall, the total supply costs for TRA cerebral angiography are lower than those of TFA cerebral angiography.

Conclusions This study represents the first itemized analysis of TRA vs TFA cerebral angiography. TRA necessitates the use of a more expensive access sheath device and higher number of closure devices utilized; however, the overall cost of closure devices was much lower in TRA group than in the TFA cohort. Overall, the total supply costs for TRA cerebral angiography are lower than those of TFA cerebral angiography.

Disclosures B. Lucke-Wold: None.

E-088 ENDOVASCULAR MANAGEMENT OF AVM-ASSOCIATED INTRACRANIAL ANEURYSMS: A SYSTEMATIC LITERATURE REVIEW

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Objective Intracranial aneurysms are present in up to 18% of arteriovenous malformations (AVMs) and increase the risk of intracranial hemorrhage. No consensus exists on the optimal treatment strategy for AVM-associated aneurysms. The goal of this study was to systematically review current endovascular treatment methods of AVM-associated intracranial aneurysms, radiographic outcomes, and periprocedural complications.

Methods A systematic review was performed in accordance with PRISMA guidelines to identify studies that investigated the use of endovascular treatments for the management of patients with AVM-associated aneurysms. Collected variables
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 included aneurysm and AVM location, aneurysm size and characteristics (intranidal versus feeding artery), AVM and aneurysm treatment modality, periprocedural complications, and long-term clinical and radiographic outcomes.

Results A total of seven studies with 216 patients and 287 AVM-associated intracranial aneurysms were included in the analysis. Two-hundred aneurysms were flow-related (69.7%; 200/287), 80 were intranidal (27.9%; 80/287), and 7 were unrelated (2.4%; 7/287). Complete occlusion was 71% (15/21) for aneurysmal coil embolization and 99% (104/105) for parent vessel sacrifice. Of the 13 aneurysms treated with ethanol sclerotherapy, eight were successfully obliterated (8/13; 61%) using ethanol sclerotherapy alone and the rest required adjunct endovascular embolization for obliteration of the artery and associated aneurysm. Periprocedural complications were reported in 25 patients (25/216; 11.6%) and consisted of ischemic symptoms, intracranial hemorrhage, and coiling complications.

Conclusion Endovascular management options of AVM-associated intracranial aneurysms are limited and mostly comprised of primary aneurysmal coil embolization or parent vessel sacrifice using coils or liquid embolics. Embolization strategy depends on a number of factors such as AVM angioarchitecture, rupture status, and adjunct AVM treatments.

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E-089 CHANGES IN MECHANICAL THROMBECTOMY INCIDENCE RATE AT A COMPREHENSIVE STROKE CENTER BEFORE AND AFTER COVID-19 SHUTDOWN

Background The COVID-19 pandemic has impacted every aspect of our current lives. Therefore, it is important to identify whether there is a change in the number of mechanical thrombectomy (MT) cases that could be attributed to COVID-19 shutdowns.

Methods This is a retrospective cohort study utilizing a prospectively maintained institutional database that tracks MT data at our institution. The study date ranges from August 21, 2018 to October 20, 2021. Patients were dichotomized by the arrival date of March 19, 2020 into pre-and post-COVID-19 shutdown groups. Stroke-onset-to-arrival time is defined as the last known normal to when they arrived at our institution. We utilized univariate analyses to assess MT differences between three settings, ‘drip and ship’, emergency department, and in-patient admission.

Results Of the 544 patients during this time period, 289 (53.1%) presented during the pre-COVID-19 shutdown timepoint while 255 (46.9%) presented after. Of the 289 pre-COVID-19 patients, 158 (54.7%) arrived by ‘drip & ship’, 120 (41.5%) presented to the emergency department, and 11 (3.8%) had a stroke in the in-patient setting. Of the 255 post-COVID-19 shutdown patients, 197 (77.3%) arrived by ‘drip & ship’, 41 (16.1%) presented to the emergency department, and 17 (6.7%) had a stroke in the in-patient setting. The changes in presentation location between the pre-and post-COVID-19 shutdown timepoint were statistically significant (p<0.001). Among the ‘drip and ship’ patients, the onset-to-arrival time to our institution lengthened from 386.2 to 488.6 minutes after the COVID-19 shutdown (p=0.002) while the onset-to-arrival times did not significantly differ for emergency department and in-patient admits (p>0.05). The arrival-to-puncture time increased from 107.1 minutes to 133.0 minutes after COVID-19 shutdowns for those presenting to the emergency department (p<0.001) while there was no significant difference between ‘drip and ship’ and in-patient times (p>0.05). The onset-to-recanalization time significantly increased for ‘drip and ship’ patients from 487.5 to 604.1 minutes after COVID-19 shutdowns (p=0.0037) while the difference was not significant for those presenting to the emergency department.

Conclusion There appears to be a 3-fold decrease in MT presenting to the emergency department at our institution since the COVID-19 shutdown while ‘drip and shipped’ and in-patient admits have increased slightly. For patients admitted to the emergency department, there was a statistically significant ~23-minute increased arrival-to-puncture time after COVID-19 shutdowns. Further monitoring of presentation over the next year as the pandemic wanes will be revealing to any lasting impact on patient triage and treatment based on the COVID-19 pandemic.

Disclosures B. Abraham: None. B. Bohnstedt: 6; C; Proctor/ Consultant.

E-090 INTRAOPERATIVE MRI FOR ENDOVASCULAR COILING OF INTRACRANIAL ANEURYSMS: A SINGLE CENTER EXPERIENCE

Intraoperative magnetic resonance imaging system (iMRIS) surgical theatre is a highly integrated operating room with an iMRI designed originally for brain tumor surgery. Its use in neurointerventional procedures, particularly in the setting of endovascular coiling of intracranial aneurysms, have not been discussed in the literature to date. We present our initial experience about the safety and feasibility of intraoperative MRI to assess post operative complications and provide baseline imaging post coiling of intracranial aneurysms. In our early experience, a total of 15 patients underwent intra-operative MRI with MRA to assess post coiling status of the intracranial aneurysm. The iMRI is an advantageous tool which can be integrated into neurointerventional workflow resulting in early postprocedural feedback and potentially reduced post-operative hospital stay.

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