P-008

RADIOGRAPHIC AND CLINICAL OUTCOME ANALYSIS OF MONO-PLANE VERSUS BI-PLANE ANGIOGRAPHY SUITES IN STROKE THROMBECTOMIES

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10.1136/neurintsurg-2019-SNIS.44

Introduction With emerging evidence in recent years proving efficacy of endovascular thrombectomy in treatment of acute strokes, there are a growing number of Primary Stroke Centers in the United States launching interventional neuroradiology services to perform acute thrombectomies at their own institutions rather than transferring patients to a higher level of stroke care. Efficacy and speed of recanalization in these hospitals that may not have biplane angiography available could be brought into question. In our current health system we have a team of multiple interventionalists performing thrombectomies in five hospitals with either mono-plane or biplane angiography suites. In this study we aimed to compare the angiographic and clinical outcome of acute stroke patients who underwent thrombectomy in bi-plane angio suites with those of performed in mono-plane systems.

Methods In this retrospective analysis, 198 patients with isolated middle cerebral artery occlusions who underwent acute intervention from March 2015 to August 2018 were included. Procedures were performed at five different hospitals in our health system. Three of these hospitals use mono-plane rooms and two centers use bi-plane machines. The same group of Neurointerventionlists performed thrombectomies at all hospitals.

Results A total of 198 patients with MCA occlusions were included with 160 (80.8%) cases performed in bi-plane angio suites. Recanalization time was 9.9 minutes longer in mono-plane group (66.9 ± 56.0 vs. 56.8 ± 45.6 minutes) but this did not reach statistical significance ($p > 0.05$). Bi-plane angiography was not significantly associated with higher recanalization rates (TICI 2B/3 94.2% vs. 91.4%, $p > 0.05$). With respect to clinical outcomes, there was no significant difference between bi-plane angiography vs. mono-plane in the National Institute of Health Stroke Scale at 90 days (20 vs. 21, $p > 0.05$). There was no significant difference in a favorable modified Rankin Scale score ($mRS \leq 3$) at 90-days between the bi-plane and mono-plane cohorts (51.7% vs. 47.7%, $p < 0.05$).

Conclusion Although performing stroke thrombectomy with monoplane angiography could theoretically delay recanalization compared to the use of a bi-plane machine, we found no significant difference between these groups in favorable radiographic reperfusion (TICI 2B/3) or favorable clinical outcomes ($mRS \leq 3$) at 90-day follow-up in our cohort of patients with MCA occlusions. This data not only supports both feasibility and efficacy of performing stroke thrombectomy on mono-plane angiography, but it also has implications for increasing access to thrombectomy to more stroke patients without sacrificing the time needed for potentially lengthy hospital transfers.

Disclosures M. Nouri: None. J. Lee: None. J. Mocco: None. P. Singh: None.

P-009

EMBOTRAP EXTRACTION AND CLOT EVALUATION AND LESION EVALUATION FOR NEUROTHROMBECTOMY: METHODS FOR THE EXCELLENT REGISTRY

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10.1136/neurintsurg-2019-SNIS.45

Rationale The EmboTrap Revascularization Device has been shown to be effective in achieving successful reperfusion in emergent large vessel occlusion (ELVO) patients, with clinical outcomes comparable to existing stent retriever devices. Prospective multicenter data on the real-world experience with EmboTrap is not available.

Aim The primary objective of the study is to assess the efficacy of routine, real-world experience of the EmboTrap and to explore the associations between imaging characteristics at presentation, including volume of core and penumbra, final infarct volume, histologic clot characteristics, subject comorbidities, revascularization rate, and clinical outcomes.

Design This is a prospective, global, multi-center, single-arm, observational registry. Up to 1000 subjects at 50 different sites in Europe and US may be enrolled in the study.

Adult patients (>18 years) with angiographically confirmed ELVO, and treated with EmboTrap as first attempted device will be eligible for participation in the study. Patients with confirmed pregnancy or enrolled in another investigational clinical trial will be excluded.

This study will utilize expanded thrombolysis in cerebral infarction score (eTICI) and an independent Core Imaging Laboratory to assess baseline CT/MR imaging (e.g. ASPECTS, infarct volume, clot location, perfusion), procedural angiography (eTICI score for every pass, emboli to new territories, collateral score) and post-procedure CT/MR imaging (infarct volume, intracranial hemorrhage). All imaging will be read independently by an experienced Imaging Core Lab blinded to all clinical data. In addition, an independent Core Laboratory will also perform clot analysis.

Study outcomes Pre-specified endpoints of the study include successful revascularization (modified thrombolysis in cerebral infarction score $\geq 2b$), first pass effect (eTICI $\geq 2c$ in a single pass without rescue), number of passes, functional independence assessed as modified Rankin Score of ≤ 2 at 90 days, 2 rates of embolization to new territory, symptomatic intracranial hemorrhage at 24 hours and all-cause mortality at 90 days.

Analysis Standard descriptive statistical summaries will be provided. For categorical endpoints, two-sided exact 95% confidence intervals will be presented. Regression analyses will be

conducted to determine the association between baseline subject comorbidities, clot characteristics and reperfusion, with a focus on imaging findings. The plan for per pass analysis both by an independent core imaging laboratory and by an independent clot analysis laboratory sets apart this registry from other similar studies. In addition, the reperfusion assessment by the independent core lab will be using innovative eTICI.

Disclosures A. Siddiqui: 1; C; Co-investigator NIH/NINDS 1R01NS091075. 2; C; Amnis Therapeutics, Boston Scientific, Canon Medical Systems USA Inc, Cerebrotech Medical Systems, Cerenovus, Corindus Inc., Endostream Medical Ltd, Guidepoint Global Consulting, Imperative Care, Integra LifeSciences Corp, Medtronic, MicroVent, Q'Apel Medical Inc, Rapid Medical, Rebound Therapeutics Corp., Serenity Medical Inc, Silk Road Medical, StimMed, Stryker, Three Rivers Medical, VasSol, W.L. Gore & Associates. 4; C; Amnis Therapeutics, Apama Medical, Blink TBI Inc, Buffalo Technology Partners Inc, Cardinal Consultants, Cerebrotech Medical Systems, Cognition Medical, Endostream Medical Ltd, Imperative Care, International Medical Distribution Partners, Neurovascular Diagnostics Inc, Q'Apel Medical Inc, Rebound Therapeutics Corp, Rist Neurovascular Inc, Serenity Medical, Silk Road Medical, StimMed, Synchron, Three Rivers Medical Inc, Viseon Spine. T. Andersson: 2; C; Neuravi, Ablynx, Amnis Therapeutics, Medtronic, Rapid Medical, Stryker. S. De Meyer: None. K. Doyle: None. J. Fiehler: None. W. Hacke: None. R. Hanel: 2; C; Three Rivers Medical, Medtronic, Microvention, Codman, Stryker. T. Jovin: 2; C; Neuravi, Codman, Medtronic, Stryker, Silk Road, Anaconda, Blockade Medical. D. Kallmes: None. D. Liebeskind: None. A. Yoo: 2; C; Cerenovus. O. Zaidat: 2; C; Stryker, Medtronic, Neuravi, Penumbra. R. Nogueira: 2; C; Neuravi, Medtronic, Penumbra, Stryker.

P-010 SELECTIVE POSTERIOR CEREBRAL ARTERY AMOBARBITAL TEST: A PREDICTOR OF MEMORY FOLLOWING SUBTEMPORAL SELECTIVE AMYGDALOHIPPOCAMPECTOMY

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10.1136/neurintsurg-2019-SNIS.46

Introduction Selective Posterior Cerebral Artery Amobarbital Test (PCA WADA) has been used to predict post-operative memory impairment following temporal epilepsy surgery in patients that have previously failed a traditional intracarotid artery amobarbital test (ICA WADA).

Methods We retrospectively reviewed medical records from 2012 to 2018 for all patients with seizures who underwent selective PCA WADA at our institution, following either failed or inconclusive ICA WADA. Standardized neuropsychological testing was performed prior and during the WADA procedure, as well as post-surgery in patients who underwent resection.

Results A total of 33 patients underwent a selective PCA WADA, with no complications recorded. 26 patients with medically-refractory epilepsy were determined to have a seizure focus amenable to selective amygdalohippocampectomy following extensive EEG monitoring. Of these 26 patients, 6 (23%) patients had a failed PCA WADA and did not undergo selective amygdalohippocampectomy. Another 7 patients (27%) declined surgical resection, leaving 13 patients who underwent

subtemporal selective amygdalohippocampectomy. Hippocampal sclerosis was found in all 13 patients (100%) upon pathological examinations. 12 patients (92%) subsequently had formal neuropsychological testing and all were found to have stable memory relative to preoperative examination. 10 patients (77%) were seizure free and had an Engle Grade of I with average follow up of 13 months.

Conclusion Selective PCA WADA is predictive of memory outcomes following a subtemporal selective amygdalohippocampectomy in patients with either a failed or inconclusive ICA WADA. Furthermore, given the low risk of complication and great potential benefit of seizure freedom, A selective PCA Wada may be warranted in medically intractable epilepsy patients that are candidates for a selective amygdalohippocampectomy with a prior failed or inconclusive ICA WADA.

Disclosures J. Catapano: None. A. Whiting: None. D. Wang: None. M. Labib: None. V. Fredrickson: None. K. Smith: None. A. Ducruet: None. F. Albuquerque: None.

P-011 INCREASED RATES OF SUCCESSFUL FIRST PASS RECANALIZATION DURING MECHANICAL THROMBECTOMY FOR M2 OCCLUSIONS: A SINGLE INSTITUTION STUDY

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10.1136/neurintsurg-2019-SNIS.47

Background Mechanical thrombectomy (MT) is standard of care for treatment of acute ischemic stroke due to proximal anterior circulation large vessel occlusion, such as the M1 segment of the middle cerebral artery (MCA). The effectiveness and complication profile in more distal vessels such as the M2 segment, however, remains to be completely defined.

Methods All MT treatments for acute M1 or M2 occlusion between 2011 and 2018 were retrospectively reviewed. Patients with thrombectomy using Merci device, intra-arterial pharmacological thrombolysis, mechanical wire maceration, or only using a balloon were excluded. Patient characteristics (age, NIHSS), number of passages, first passage recanalization success (TICI 2b or higher), total recanalization success, and hemorrhagic complications (ICH and SAH) were compared between M1 and M2 groups.

Results Two hundred sixty cases, including 171 M1 and 89 M2 occlusions, were analyzed. The mean age of patients and median of NIHSS were 70.7 ± 15.0 (SD) years and 15 (1–33), respectively. There was no significant difference between M1 and M2 groups for age and NIHSS ($p=0.727$ and $p=0.065$, respectively). The total number of passages in M2 group was significantly less than M1 group (Median of 1 and range of 1 to 5 versus median of 2 and range of 1 to 7, $p=0.023$). First passage recanalization success rate was significantly higher in the M2 group than the M1 group (55.1% versus 39.2%, $p=0.015$). The total recanalization success rate also trended higher in the M2 group, but it did not reach statistical significance (83% versus 74.7%, $p=0.132$). Subarachnoid hemorrhage rate was significantly higher in the M2 group than the M1 group (24.7% versus 12.3%, $p=0.010$), but there was no difference for ICH between the two groups ($p=0.862$).

Conclusion Mechanical thrombectomy for M2 occlusions is effective, has a higher rate of first pass recanalization, and has