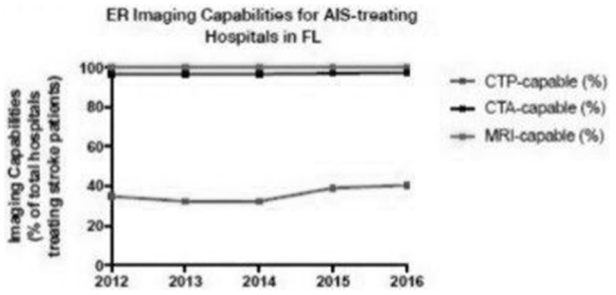

Abstract E-048 figure 1

113,489 (50%) were female. 14,920 (7%) received IV tPA and 3,026 (1.3%) received EST. Nearly all strokes were treated at CTA and MRI-capable EDs, but 139,316 (62%) were treated at non-CTP-capable hospitals (figure 1). 28 (60%) of EST-capable hospitals were not CTP-capable, a trend that did not change over the study period (figure 2). In the NY cohort, among 91,193 admissions for stroke at 225 hospitals, 71,333 (78%) were evaluated at non-CTP-capable centers. 30 (13%) of hospitals treating AIS patients were CTP-capable. CTP-capable centers were concentrated in urban areas, with significant annual stroke rates in non-urban areas without CTP.

Conclusions In this large cohort study, the majority of AIS patients and EDs treating AIS did not have access to CTP, a finding that did not immediately increase following 2015 trials. Use of CTP as a universal screening tool for EST may still be limited. Non-contrast CT remains the most important screening tool for EST in AIS patients under 6 hours from symptom onset.

Disclosures A. Czap: None. **S. Lee:** None. **V. Lopez-Rivera:** None. **J. Grotta:** None. **P. Chen:** None. **S. Blackburn:** None. **L. Giancardo:** None. **S. Savitz:** None. **L. McCullough:** None. **A. Bambhroliya:** None. **F. Vahidy:** None. **S. Sheth:** None.

E-049 DWI INFARCTION PATTERNS AND PERFUSION PARAMETERS IN ANTERIOR VERSUS POSTERIOR CIRCULATION STROKE SECONDARY TO INTRACRANIAL ATHEROSCLEROTIC DISEASE

[1]R Abdalla*, [1]O Ansari, [1]M Pan, [2]D Cantrell, [2]A Shaibani, [2]M Potts, [2]M Hurley, [2]B Jahromi, [3]S Ansari. *[1]Radiology, Northwestern University – Feinberg school of Medicine, Chicago, IL; [2]Radiology, Neurological Surgery, Northwestern University – Feinberg school of Medicine, Chicago, IL; [3]Radiology, Neurology, Neurological Surgery, Northwestern University – Feinberg school of Medicine, Chicago, IL*

10.1136/neurintsurg-2019-SNIS.124

Purpose Intracranial atherosclerotic disease is a common etiology of ischemic strokes and stroke recurrence. Recent literature suggests treatment should be tailored according to plaque instability versus perfusion failure mechanisms, rather than the degree of stenosis. We aimed to study the difference in infarction patterns between anterior and posterior circulation intracranial atherosclerotic disease (ICAD), and their relationship to vascular risk factors and perfusion parameters.

Methods A retrospective review of our institution's prospective stroke database from Jan 2012 to May 2018 was performed. We identified patients with acute ischemic stroke (AIS) secondary to ICAD, restricted diffusion weighted imaging (DWI) findings attributed to a > 50% intracranial stenosis with or without perfusion abnormality, mean transit time (MTT) elevation, on MRI/MRA/MRP performed within one week of presentation. Infarction patterns were qualitatively graded as thromboembolic (TE), perforator (P), or watershed (W) in the vascular distributions of interest with agreement between two interventional neuroradiologists. Baseline demographics, vascular risk factors and correlation of DWI infarction patterns and perfusion MTT patterns were studied with respect to the anterior versus posterior intracranial circulation.

Results We identified 55 patients with anterior circulation and 18 patients with posterior circulation infarcts secondary to ICAD. There was no difference in baseline demographics between both groups. Watershed infarctions were seen in 30% of symptomatic patients with anterior circulation ICAD. There were no significant differences observed in the non-watershed infarction patterns between anterior and posterior circulation disease (TE: 41% vs 44%, P: 38% vs 39% and mixed: 21% vs. 17%, p=0.908), respectively. mean transit time was equally elevated in both watershed (90%) vs. non-watershed (86%) anterior circulation ICAD, p=0.99. ICAD patients with posterior circulation infarcts were more likely to have suffered prior strokes/TIAs (73% vs 35%, p=0.016) with higher trends in diabetics (73% vs. 43%, p=0.068).

Conclusion Hemodynamically significant stenosis is observed in the majority of symptomatic anterior circulation ICAD but is not necessarily associated with watershed DWI infarction patterns. Posterior circulation ICAD exhibits higher likelihood for stroke recurrence with a perforator or thromboembolic pattern of infarction. Combining MR vessel wall imaging techniques with DWI patterns of infarction and 4D flow MRA imaging to assess flow compromise in the posterior circulation may be beneficial in further discerning the mechanisms of ICAD related stroke, risks of stroke recurrence, and guide medical versus interventional therapies.

Disclosures R. Abdalla: None. **O. Ansari:** None. **M. Pan:** None. **D. Cantrell:** None. **A. Shaibani:** None. **M. Potts:** None. **M. Hurley:** None. **B. Jahromi:** None. **S. Ansari:** None.

E-050 SAFETY AND FEASIBILITY OF DISTAL RADIAL ACCESS IN ANATOMIC SNUFF BOX FOR CEREBRAL ANGIOGRAPHY: INITIAL EXPERIENCE

P Patel*, I Bach, N Majmundar, P Khandelwal. *Neurosurgery, Rutgers University, Newark, NJ*

10.1136/neurintsurg-2019-SNIS.125

Objective To describe feasibility, technique and safety of distal radial access in anatomic snuff box for cerebral angiography. Also, to describe potential advantages and limitations compared to conventional radial access at the wrist and transfemoral access.

Methods We performed retrospective review of cerebral angiography procedures performed or attempted with distal radial access between October 2018 through February 2019, at University Hospital (Newark, NJ). Ultrasound measurement of radial artery in anatomic snuff box was performed in all potential candidates and different approach was performed in patients with <2 mm radial artery diameter. We did not perform Barbeau test, given as cardiology literature suggesting

Abstract E-050 Figure 1

poor prediction for hand ischemia with this test. All access were performed under ultrasound guidance, using single wall technique. After successful access, rest of cerebral angiogram procedure was similar to conventional radial approach. Demographic information, indication, technical details, complications and patient perceptions were collected.

Results Total of 25 cerebral angiography procedures were successfully performed in patients with age ranging 33–78 years, with distal radial access. Once successful access was achieved, intended vessels were catheterized in all patients. One patient had left distal radial access, rest had on Right. On an overage 3.6 (1–6) vessels were catheterized. No major complications were noted. Average procedure end to discharge time was 3 hours and 15 minutes. 2 patient reported prolonged pain at wrist, lasting 1 week. Patients who had prior angiogram with different approach, reported preference for Distal Radial approach. On the other hand, there were 4 failed attempted in the same time period. 2 were converted to conventional radial and 2 transfemoral. These failed attempts were related to severe vasospasm and were in the early part of the learning curve.

Conclusion This single center experience suggests feasibility and safety of distal radial access for cerebral angiography. Most patients in this study who had angiogram by other approach, preferred distal radial approach. In addition, post procedure recovery time is significantly shorter. There should be further large-scale studies to evaluate this potentially useful and in select cases advantageous approach.

Disclosures P. Patel: None. **I. Bach:** None. **N. Majmundar:** None. **P. Khandelwal:** None.

E-051 INTRACRANIAL ANEURYSM CLASSIFICATION SCALE OPTIMIZED FOR TREATMENT DEVICE INDICATIONS AND CONTRAINDICATIONS

W Merritt*, T Becker, A Ducruet. *Center for Bioengineering Innovation, Northern Arizona University, Flagstaff, AZ*

10.1136/neurintsurg-2019-SNIS.126

Introduction Aneurysm classification is typically based upon midline-dome diameter (size) and occasionally utilizes other parameters such as midline-dome diameter to neck diameter ratio (d:n ratio) and neck diameter (figure 1). Size classifications are typically oriented around the aneurysm's risk of rupture, and the classification ranges are often inconsistent between sources. While the current classification system still serves a significant role, we propose a more comprehensive and consistent classification system that considers multiple dimensions/parameters and allows surgeons, regulatory bodies, and medical device developers to quickly identify suitable treatment devices for patient-specific aneurysm dimensions and morphologies.

Materials and methods A meta-analysis of both intracranial aneurysm studies and papers outlining aneurysm classification systems provided data regarding aneurysm dimensions, correlation of aneurysm dimensions to treatment failure rates of endovascular devices, and the current state of aneurysm classification systems. This data was then used to create an intracranial aneurysm classification system that is optimized to help predict the success or failure of certain types of endovascular intracranial aneurysm treatments.

Results and discussion While there is a correlation between aneurysm size and the outcome of certain aneurysm treatment devices, there are other parameters that are equally as impactful on the treatment outcome, such as midline diameter (d), neck diameter (n), and the ratio between them (d:n ratio) (Figure 1). Neck diameter and d:n ratio both had significant effects on treatment outcome for certain devices, even though aneurysm size (dome height) is often the only dimension referenced.

Conclusions While aneurysm size can be an important indicator for both aneurysm rupture and treatment outcome, there are other parameters that also have a significant impact on treatment success. These additional parameters, such as midline diameter, neck diameter and the d:n ratio, should be carefully considered when choosing a device for treatment, developing a device, or approving devices into the market. The proposed classification system in this study has the potential to help close the research gap between the different