and radiopacity in a water-filled phantom. Improved kink radii compared to a commercial catheter demonstrated a device that could maintain lumen patency during navigation. Device construction featured simple manufacturing steps to produce a low-profile catheter with MRI and X-ray visibility for neurointerventional applications.

Disclosures B. Kilbride: 6; C; Penumbra, Inc. **C. Jordan:** 6; C; Penumbra, Inc. **A. Chu:** None. **D. Barry:** None. **T. Moore:** None. **A. Martin:** None. **M. Wilson:** None. **S. Hetts:** None.

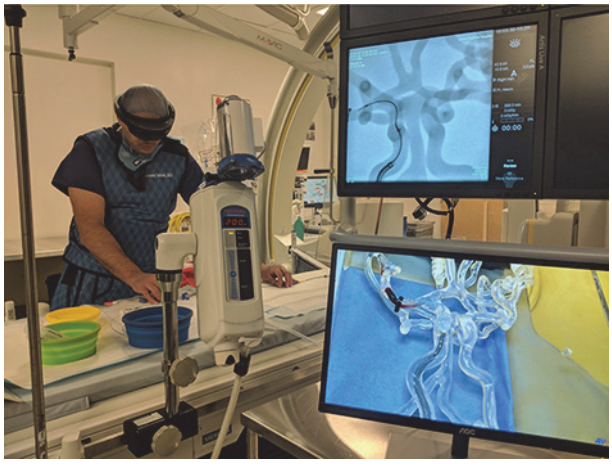
E-104 IMAGE GUIDANCE FOR MECHANICAL THROMBECTOMY IN STROKE USING AN OPTICAL SEE-THROUGH HEAD-MOUNTED DISPLAY (OST-HMD): PROOF OF CONCEPT AND RATIONALE

[1]G Deib*, [2]T Song, [2]W Gu, [3]J Perkowski, [2]N Navab, [2]M Unberath, [4]F Hui, [4]P Gailloud. *[1]Neuroradiology, West Virginia University, Morgantown, WV; [2]Computer Aided Medical Procedures, Johns Hopkins University, Baltimore, MD; [3]Cerenovus, Irvine, CA; [4]Neuroradiology, Johns Hopkins University, Baltimore, MD*

10.1136/neurintsurg-2020-SNIS.137

Background and Purpose Optical see-through head-mounted displays (OST-HMD) can enable a mixed reality (MR) experience for neurointerventionalists during procedures encompassing high resolution radiographic imaging and an unhindered view of the procedural site. The authors present a technical note detailing an approach to mechanical thrombectomy in stroke utilizing an OST-HMD as an alternative to traditional angiography suite display monitors.

Methods Mixed reality visualization was achieved using the Microsoft HoloLens system. An anatomically realistic flow model was employed to perform the procedure. A commercially available guide sheath, intermediate aspiration catheter, microcatheter and mechanical thrombectomy device were utilized to perform a mechanical thrombectomy of a right M1 thrombus. The head mounted display created a real-time mixed reality environment by superimposing the virtual AP and lateral views onto the interventionalist's field of view. The procedure was filmed through the point of view of the operator. The video was reviewed to assess whether key anatomic landmarks and materials could be consistently and reliably visualized. Dosimetry and time of procedure were recorded. The operator completed a questionnaire following the procedure detailing benefits, limitations, and visualization mode preferences.



Abstract E-104 Figure 1

Results A right M1 thrombectomy was successfully performed using OST-HMD image guidance on an anatomically realistic flow model. Dosimetry and procedural time compared favorably to typical procedural times. All visualization modes were equally effective in providing image guidance. Key anatomic landmarks and materials were consistently and reliably visualized.

Conclusions This preliminary study demonstrates that mechanical thrombectomy for stroke utilizing OST-HMDs for image guidance is feasible. This novel visualization approach may serve as a valuable tool for performing mechanical thrombectomy and other endovascular image-guided procedures.

Disclosures G. Deib: None. **T. Song:** None. **W. Gu:** None. **J. Perkowski:** None. **N. Navab:** None. **M. Unberath:** None. **F. Hui:** None. **P. Gailloud:** None.

E-105 LEARNING CURVE FOR DIAGNOSTIC CEREBRAL ANGIOGRAPHY: TRANSRADIAL ACCESS VERSUS TRANSFEMORAL ACCESS

M Tso*, G Rajah, R Dossani, M Meyer, M McPheeters, K Vakharia, M Waqas, K Snyder, E Levy, A Siddiqui, J Davies. *Neurosurgery, University at Buffalo, Buffalo, NY*

10.1136/neurintsurg-2020-SNIS.138

Background Diagnostic cerebral angiography (DSA) and neurointerventions have traditionally been performed via transfemoral access (TFA). The perception of a steep learning curve associated with transradial access (TRA) has limited adoption in neurointervention. This study compares the learning curves of transradial vs. transfemoral DSA in a cohort of neurointerventional fellows.

Methods The first 150 consecutive radial and femoral DSA were identified for each fellow from a prospective neurointerventional registry from July 2017 to March 2020. Total fluoroscopy time and number of intracranial arteries injected were recorded. Mean fluoroscopy time per intracranial artery injected (termed angiographic efficiency) was calculated and was used as a surrogate measure of technical proficiency. Mean angiographic efficiencies were compared across partitions of 25 consecutive DSAs (e.g. 1–25, 26–50, 51–75, etc.).

Results There were 607 radial DSA and 635 femoral DSA identified among 5 fellows. The overall angiographic efficiencies were not significantly different based on access site (radial mean 3.2 min, femoral mean 3.7 min, $p>0.05$). For 3 fellows without prior endovascular experience, technical proficiency was obtained between 25–50 femoral DSA procedures. Among these same fellows, one fellow achieved technical proficiency after 25–50 radial DSA procedures, while the other 2 fellows had flattened learning curves. There were 2 fellows that had no significant learning curve for either access type, but both had extensive experience with endovascular procedures prior to starting fellowship. Two patients (2/1342 = 0.1%) experienced transient neurologic symptoms post-procedure. Among 635 femoral DSA, there were 22 (3.5%) minor adverse events (14 small groin hematomas not requiring transfusion, 1 pseudoaneurysm, 7 non-flow-limiting dissections). Among 607 radial DSA, there were 3 (0.5%) minor adverse events (2 small forearm hematomas, 1 intraluminal wire removed with