P120/221 CAN THE NOVEL PRELAX TRACTION MANEUVER BE THE LONG-AWAITED SOLUTION FOR THE TREATMENT OF POSTHEMORRHAGIC CEREBRAL VASOSPASM ?

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Introduction Cerebral vasospasm (CVS) is a frequent complication following subarachnoid hemorrhage (SAH). The most interventional and pharmacological measures are only effective for short periods.

Recently, studies have shown a possibly beneficial effect of the treatment of CVS following SAH through stent-retriever devices. We report our experience with the new pRELAX traction maneuver and device in the treatment of CVS.

Aim of Study Our aim is to show that the pRELAX traction maneuver is both safe and effective in our small experience.

Methods We treated six patients suffering from posthemorrhagic CVS using pRELAX Traction Maneuver.

We temporarily deployed the pRELAX device into CVS affected vessels and pulled it back unfolded into the internal carotid artery; in a technique comparable to endovascular thrombectomy.

Angiographic results, periprocedural complications and angiographic follow-up data were recorded.

Results Six patients and thirteen vessels were included (8 middle cerebral artery; 5 intradural internal carotid artery). There were no periprocedural complications and all vessels showed significant angiographic improvement already during the treatment. None of the treated vessels showed recurrent CVS requiring further endovascular treatment. No new ischemia were found in the treated vessels territories and no vascular injury was seen on follow-up angiographies.

Conclusion The treatment of CVS with the new pRELAX traction maneuver showed promising results in our experience, at a low risk and with favorable in-hospital course of the patients. Since the treatment options of CVS following SAH are limited, this initiative may pose a long sought measure to prevent ischemic complications for patients surviving SAH.

Disclosure of Interest Ali Khanafer:
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Victoria Hellstern:
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Alexandru Cimpoca:
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Oliver Ganslandt:
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P121/240 GO WITH THE FLOW TO MAXIMIZE CLOT INGESTION

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Introduction Thrombectomy in distal, medium vessels is becoming a topic of increasing interest. To date, most bench-top comparisons of aspiration catheters have focused on larger catheters utilized in proximal occlusions and there are no *in vitro* studies focused on 3, 4, & 5F catheters performance.

Aim of Study The purpose of this study is to compare the performance of the 3F, 4F, and 5F Q™ Aspiration Catheters verse Penumbra 3F, 4F, Sofia 5F.

Methods Aspiration flow and force were collected. Navigation was assessed in a tortuous M2 model and an sinusoidal model. Pressure and flow sensors were used to obtain instantaneous values for water and synthetic clots during aspiration.

Results The measured flow rate of the Q3, Q4, Q5 catheters (aspiration only) was 3.54 ml/s, 5.32 ml/s, and 6.87 ml/s, respectively, and 3 Max, 4 Max, SOFIA 5 was 1.46 ml/s, 2.56 ml/s, and 2.91 ml/s, respectively.

The mean aspiration force for the Q3, Q4 catheters was 44mN, and 60mN, respectively, and 3Max, 4Max was 32mN and 47mN, respectively.

The mean catheter ingestion time (catheter tip to canister) of Q3, Q4, Q5 aspirating soft clot type were 30s, 10s, and 77s, respectively, and 3 Max, 4 Max, SOFIA 5 were mostly incomplete. For medium clot types, Q3, Q4, Q5 mean ingestion times were 13s, 21s and 31s, respectively, and 3Max, 4 Max, SOFIA 5 were mostly incomplete.

Conclusion The Q catheter demonstrated higher flow rates, faster complete clot ingestion and higher aspiration force than the competive catheters.

Disclosure of Interest PM, PR, and OB have received research funding from MIVI Neuroscience. JW and TR work for MIVI Neuroscience. MC, NC, and WB are consultants for MIVI Neuroscience.

P122/250 MAN VS MACHINE: HIGH VARIABILITY IN PHYSICIAN ESTIMATIONS OF FLOW DIVERTING STENT DEPLOYMENT VS PRESIZE NEUROVASCULAR SOFTWARE SIMULATION

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Introduction Clinician variability in preoperative planning of endovascular implant deployment and associated inaccuracies have not been yet documented.

Aim of Study This study aims to quantify the accuracy of clinician flow diverter (FD) planning and directly compares it with PreSize® Neurovascular (Oxford Heartbeat Ltd.) software simulations.

Methods Eight experienced neurointerventionalists (NIs), blinded to procedural details, were provided preoperative 3D-RA volumetric data along with images annotated with the distal landing location of a deployed Surpass Evolve (Stryker Neurovascular) FD from 51 retrospective patient cases. NIs were asked to perform a planning routine reflecting their normal practice and estimate the stent's proximal landing using volumetric data and the labelled dimensions of the FD used. Deployed length estimation was also performed using PreSize software for the same cases. NI and software estimated lengths were compared to post-procedural observed deployed stent length (control) with Bland-Altman plots. Intraclass correlation coefficient (ICC) was used for NI agreement assessment.

Results Mean NI accuracy of estimated deployed FD length was 81%(±15) versus PreSize's accuracy of 95%(±4). Software demonstrated significantly higher accuracy ($p<.001$). The mean absolute error between estimated and control lengths was 4 mm(±3.5 mm, range 0.03–30.2 mm) for NIs and 1 mm(±0.9 mm, range 0.01–3.9 mm) for PreSize. No discernable accuracy trends among NIs or across vasculature and aneurysm morphology (size, vessel diameter, tortuosity) were found.

Conclusion The study quantified experienced clinicians' significant variability in predicting an FD deployment with current planning approaches. Comparatively, PreSize simulated FD deployment was consistently more accurate and reliable, demonstrating its potential to improve standard-of-practice.

Disclosure of Interest AR, SB: Consulting agreement Stryker, Cerenovus, Microvention

J Dower: PI for Oxford Heartbeat Multicentre Prospective Oxford Heartbeat PreSize study. Consulting agreement Stryker, Phenox, Microvention, Oxford Endovascular

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P124/272 INITIAL ENCOUNTER WITH A CUTTING-EDGE MOBILE HEAD CT SCANNER (SOMATOM ON.SITE) IN A NEURO-INTENSIVE CARE UNIT

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Introduction Mobile CT scanners are promising for neurointensive care units (NICUs), but early generations had poor image quality.

Aim of Study We retrospectively evaluated a state-of-the-art mobile head CT scanner, Somatom On.site (Siemens, Germany), for use in NICUs.

Methods This retrospective study analysed consecutive patients who underwent head CT scans with the Somatom On.site. Patient characteristics, scan parameters and radiology reports were reviewed. Image quality was assessed subjectively using a 5-point Likert scale. Hounsfield units of air, water and bone were measured in predefined regions of interest.

Results Mobile CT was used for monitoring intracranial haemorrhage (51%), postoperative neurosurgical monitoring (28%), neurological deterioration (14%), bedside monitoring after EVD placement (4%), and ischaemic stroke follow-up (3%). Mobile CT provided adequate image quality and replaced stationary CT in all cases. Overall image quality was given a mean score of 4 points, with 5 points for subarachnoid space delineation and cortico-medullary differentiation. Hounsfield unit measurements were within recommended limits for air, water and bone.

Conclusion The study demonstrates the clinical effectiveness of modern mobile CT scanners in neurointensive care units. The Somatom On.site provides sufficient image quality, saves time and supports timely decision making. The integration of mobile CT scanners in NICUs improves patient care and workflow. Prospective studies are needed to validate these findings and assess the long-term impact in NICUs and other units, such as stroke units.

Disclosure of Interest CK serves as consultants for Acandis GmbH (Pforzheim, Germany) and proctor for MicroVention Inc./Sequent Medical (Aliso Viejo, CA, USA).

P125/278 APPLICATION OF 3-D VASCULAR MODEL AUGMENTED REALITY IN ENDOVASCULAR TREATMENT OF INTRACRANIAL ANEURYSMS

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Introduction Safe and complete treatment of intracranial aneurysm requires a thorough understanding of the complex three-dimensional vascular structure specific to each patient. We introduced a 3D vascular model mixed reality (MR) in endovascular treatment to enhance anatomical confidence.

Aim of Study This study aims to validate the usefulness and feasibility of a MR application in the endovascular treatment of intracranial aneurysms.

Methods Developed an application software called Object Loader using the Unity program, enabling the upload and manipulation of a 3-D vascular model on the Hololens. From September 2021, endovascular procedures were performed on consecutive patients with intracranial aneurysms, utilizing MR assistance. A score system composed of total score 7 was employed to evaluate the merits of MR application in each case.

Results Between September 2021 and March 2023, 54 MR-assisted endovascular treatments were performed on 51 patients. No immediate complications were observed. Favorable occlusion was achieved in 80% of cases. Discrimination of overlapped vasculature and rechecking dangerous regions were the most useful merits.

Conclusion In conclusion, the utilization of mixed reality with a 3-dimensional vascular model digital twin enhanced the anatomical confidence and safety of endovascular procedures for the treatment of intracranial aneurysms. The discrimination of overlapped vascular structures and real-time alarming of the physician regarding dangerous areas during the procedure demonstrated the usefulness of this technology. The continuous evolution of augmented reality has the potential to revolutionize daily procedures.

Disclosure of Interest nothing to disclose