3.1 OTHER – Innovation

O29/279 CLINICAL VALIDATION TRIAL OF BRAIN20(R), A MEDICAL DEVICE TO PREDICT FUNCTIONAL RECOVERY IN PATIENTS WITH ACUTE ISCHEMIC STROKE UNDERGOING ENDOVASCULAR THROMBECTOMY. PROMISE20 STUDY PROTOCOL

[1,2]Alicia Martinez-Piñeiro*, [3]Jordi Cortés, [1]Monica Millan, [1]Natalia Pérez de la Ossa, [4]Marc Ribo Jacobi, [5]Joaquin Serena, [6]Jaume Coll, [2]Gisela Ruiz, [2]Antoni Davalos. *[1]Hospital Germans Trias i Pujol, Neurosciences, Badalona, Spain; [2]Time is Brain, Badalona, Spain; [3]Universitat Politècnica de Catalunya · Barcelona Tech – UPC, Statistics and Operations Research, Barcelona, Spain; [4]Vall d'Hebron University Hospital, Neurology, Barcelona, Spain; [5]Hospital Universitari de Girona Doctor Josep Trueta, Neurology, Girona, Spain; [6]Time is Brain S.L., Badalona, Spain*

10.1136/jnis-2023-ESMINT.29

Introduction N20 somatosensory evoked potential (SEP) response shows high predictive accuracy of functional recovery in patients with acute ischemic stroke (AIS) undergoing endovascular thrombectomy (EVT) (https://www.clinicaltrials.gov/ct2/show/NCT04099615). This capacity is independent and higher than clinical and advanced imaging variables.
Aim of Study To validate BraiN20®, a portable, non-invasive, AI-based device to monitor in real-time the presence and characteristics of N20 in AIS.
Methods 65 patients with AIS undergoing EVT within 24 hours from onset are included in three comprehensive stroke centers. Eligibility criteria are no significant pre-stroke functional dependence, baseline NIHSS score $\geq$ 6 points, occlusion (mTICI 0–1) of the intracranial ICA, MCA-M1 or M2 suitable for EVT per local protocols, without infarct volume restrictions measured by ASPECT score or by CTP/DWI-MRI prior to EVT. The primary objective is to confirm an optimal/good reliability of N20 registration before EVT higher than 75% by two blind expert neurophysiologists, assuming a true proportion equal to 87.5%. Secondary endpoints are the predictive accuracy of N20 response recorded by BraiN20® before and after EVT on functional outcome evaluated by the mRS at 7 and 90 days and analyzed by using ROC curves. A futility interim analysis is planned after the inclusion of 25% of the sample.
Results The trial is sponsored by Time is Brain S.L. and will start early July 2023. Primary endpoint results are expected by the end of this year.
Conclusion BraiN20® could be a useful medical device to predict salvageable brain and functional recovery of patients along the stroke chain.
Disclosure of Interest Co-Founder and CEO of Time is Brain S.L.

O30/301 INTERACTION FORCES BETWEEN A GUIDEWIRE AND A CLOT ANALOGUE – NEW PERSPECTIVES FOR MECHANICAL THROMBECTOMY

[1]Evgenia Roussinova*, [2]Olivier Brina, [2]Philippe Reymond, [1,3]Silvestro Micera, [1,4]Mohamed Bouri, [2]Paolo Machi. *[1]Federal Institute of Technology of Lausanne (EPFL), Translational Neural Engineering Lab (TNE), Lausanne, Switzerland; [2]Geneva University Hospitals, Division of Neuroradiology, Geneva, Switzerland; [3]Scuola Superiore Sant'Anna, The Biorobotics Institute and Department of Excellence in Robotics and AI, Pisa, Italy; [4]Federal Institute of Technology of Lausanne (EPFL), Biorobotics laboratory (BioRob), Lausanne, Switzerland*

10.1136/jnis-2023-ESMINT.30

Introduction In the treatment of acute ischemic stroke, localising the clot and identifying its mechanical characteristics are two of the main highlighted challenges for the choice of the extraction technique.
Aim of Study This study aims to: 1) explore the interaction forces between a guidewire and a synthetic clot for different occlusion conditions in a simplified arterial model; 2) develop algorithms to identify the beginning and the end of the clot and therefore deduce its length.
Methods Clot analogues of different stiffnesses and sizes were injected with a controlled pressure in a silicone conical arterial phantom. A robotic device instrumented with a force sensor controlled the movement of a guidewire at 1 mm/s both in crossing the lesion and in retracting the guidewire after clot penetration.
Results For a given pressure and clot volume, a rigid clot produces higher forces than a soft clot. However, at the same location, we can have a softer clot inserted at a high pressure or a stiffer clot inserted at a low pressure, resulting in similar forces. Based on the slope of the measured force during penetration, the beginning of the clot can be successfully detected. The clot's end can be identified through the force measurement while retracting the guidewire.
Conclusion This in vitro study shows that multiple factors influence the lodgement of the clot and the corresponding forces that the guidewire encounters. Through a proximal force measurement, the extremities of the clot can be detected.
Disclosure of Interest Nothing to disclose.

4.1 CASE PROPOSAL – Aneurysms

O31/303 THREE STORIES ON ECLIPS

Jan-Hendrik Buhk*. *Asklepios Hospital St. georg, Neuroradiology, Hamburg, Germany*

10.1136/jnis-2023-ESMINT.31

Introduction Wide-neck shallow bifurcation aneurysms remain challenging for endovascular treatment and often demand complex combinations of implants.
Aim of Study Here, we present 3 cases, in which the eCLIPS device facilitated treatment of shallow wide-necked aneurysms with encouraging results and relatively low procedural complexity.
Methods 3 female patients are presented.

Pat. #1: 52 year-old with history of almost full recovery after severe SAH from tiny basilar tip aneurysm and early relapse. Scheduled treatment with eCLIPS and coils.

Pat. #2: 68 year old with complex ICA terminus aneurysm. Treatment with eCLIPS and coils.

Pat. #3: 76 year old with very wide-neck basilar tip aneurysm, no comorbidities, urgent treatment wish. Individual decision pro treatment with eCLIPS. In this case, the eCLIPS flow diverter was used, no additional coils.

Results All treatments were successful, no periprocedural infarcts.

Pat. #1: 1.5 year follow up shows stable complete occlusion. Clinical status is stable.

Pat. #2: Stable small residual filling after 6 months. Minor late infarction in possible relation to implants noted, as consequence dual platelet inhibition reinstalled.

Pat. #3: Postprocedural MRI showed residual flow in aneurysm sac as with other flow diverter. No further follow up available.

Conclusion The eCLIPS device family can be very useful in treating wide-neck shallow bifurcation aneurysms. Anti-platelet regime should likely include dual inhibition for at least 3 months.

Disclosure of Interest Consultant/Speaker:

Acandis, Cerenovus, Medtronic, MicroVention, Philips, Siemens, Stryker, Vesalio.

3.3 OTHER – Miscellaneous

032/312 CONTINUOUS EVALUATION OF THE ESMINT/EYMINT E-FELLOWSHIP AS A EUROPEAN TELE-LEARNING NETWORK FOR NEUROINTERVENTIONAL TRAINEES

[1]Matthias Bechstein*, [1]Helena Guerreiro, [1]Marie Teresa Nawka, [2]Vladimir Kalousek, [1]Jens Fiehler, [1]Uta Meta Paula Hanning. *[1]University Medical Center Hamburg-Eppendorf, Department of Diagnostic and Interventional Neuroradiology, Hamburg, Germany; [2]Clinical Hospital Center Sestre Milosrdnice, Department of Radiology, Zagreb, Croatia*

10.1136/jnis-2023-ESMINT.32

Introduction The European EYMINT tele-observership (e-fellowship) was initially launched in 2020 and has since enrolled 72 neurointerventional fellows. These have live remote access to procedures performed by individually assigned specialists (mentors) at geographically distant high volume neurointerventional centers.

Aim of Study 1) Assessment of situational awareness during remote attendance of neurointerventional procedures. 2) Assessment of learning progress among participants.

Methods Prospective evaluation of telestreamed cases from 2020 to 2023 via anonymous questionnaires for trainees and mentors.

Results From 06/2020 to 04/2023 a total of 498 cases were transmitted to fellows using telestream technology (33% Aneurysm, 29% AVM/DAVF, 27% Ischemic Stroke). Although not being physically present, a high level of situational awareness for the procedure (levels 4+5 on a Lickert scale from 1–5) was reported by 81.9% of fellows. The impact of the fellowship on knowledge improvement during neurointerventional training was reported to be large by 55% of participants. Technical knowledge (handling of devices) and procedural knowledge (sequence of interventional steps) were equally described to be the areas of particular improvement. Remote attendance of complex aneurysm cases (intrasaccular devices, flow diversion) seemed to deliver most value in terms of learning progress. Nevertheless, some participants stated more value from a different perspective on a common procedure, i.e. a thrombectomy.

Conclusion Tele-observerships may supplement neurointerventional hands-on training in particular of low-frequency high-complexity procedures.

Disclosure of Interest Matthias Bechstein: Nothing to disclose
Helena Guerreiro: Nothing to disclose
Teresa Nawka: Nothing to disclose
Vladimir Kalousek: Nothing to disclose
Jens Fiehler: Nothing to disclose
Uta Hanning: Nothing to disclose.

2.3 ISCHEMIC – Treatment

033/325 THE EFFICACY AND SAFETY OF DOUBLE STENTRETREVIER AS A RESCUE METHOD AFTER FAILED THROMBECTOMY

[1]Reza Rikhtehgarghiasi*, [1]Cornelius Deutschel, [2]Elif Yamac, [2]Marta Wallocha, [1]Ahmed Ayad, [1]Yan Li, [2]Rene Chapot. *[1]Institute of Diagnostic and Interventional Radiology and Neuroradiology, Uniklinikum Essen, Essen, Germany; [2]Institute of Diagnostic and Interventional Radiology and Neuroradiology, Alfried-Krupp Krankenhaus Hospital, Essen, Germany*

10.1136/jnis-2023-ESMINT.33

Introduction Thrombectomy is the standard treatment for acute ischemic stroke. No treatment for failed Thrombectomy has been so far established. As a rescue method, a double stent-retriever(SR) seems to be effective and associated with a low complication rate.

Aim of Study To prove the efficacy and saftey of Double Stentreiver as a rescue method after failed Thrombectomy.

Methods In a retrospective analysis, all patients having received mechanical Thrombectomy with double-SR as rescue therapy following failed single-SR thrombectomy between 2010–2022 were studied. The efficacy and safety of double-SR rescue therapy were evaluated using modified thrombolysis in cerebral infarction (TICI 2b/3), European Cooperation Acute Stroke Study(ECASS) II classification, and the National Institutes of Health Stroke Scale Score (NIHSS) at discharge.

Results Of 120 enrolled patients, 74 presented with MCA-(M1= 66, M2= 8), 14 with TICA, and 14 with basilar artery -occlusion. The mean intervention duration before changing the method was 34.51 minutes, and the mean number of failed- passes was 1.98. Fist-pass Effect was achieved in 81 (67%) patients after using Double-SR. The mean time of rescue-thrombectomy was 26.12 (10–150 minutes). Symptomatic intracerebral hemorrhage was observed in 6 patients (5%).

Conclusion Rescue Mechanical thrombectomy using double-SR is associated with a higher rate of successful recanalization, first-pass effect, and relatively low rate of hemorrhagic complications. Further randomized control trials are needed to confirm results and long-term outcomes.

Disclosure of Interest Nothing to disclose.

034/332 PREVENTIVE ADMINISTRATION OF VASOACTIVE AMINES IS EFFECTIVE IN COUNTERBALANCING SIGNIFICATIVE BLOOD PRESSURE DROPS WHEN NIMODIPINES ARE ADMINISTERED DURING MECHANICAL THROMBECTOMY PROCEDURES

Gianmarco Bernava*, Andrea Rosi, Jeremy Hofmeister, Paolo Machi. *Hôpitaux Universitaires de Genève (HUG), Genève, Switzerland*

10.1136/jnis-2023-ESMINT.34

Introduction During endovascular treatment of acute ischemic stroke (AIS), vasospasm can occur when materials used for mechanical thrombectomy come into contact with cerebral arteries. Nimodipine is commonly administered intra-arterially, but lowering blood pressure in AIS patients can increase neural loss affecting the patient's clinical outcome.

Aim of Study This study assessed whether continuous infusion of vasoactive amines counteracted the hypotensive effect of