E-057 SYMPTOMATIC INTRACRANIAL HEMORRHAGE AFTER MECHANICAL THROMBECTOMY – THE DIFFERENCE BETWEEN ISO-OSMOLAR AND LOW-OSMOLAR CONTRAST MEDIA

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Background and Purpose Symptomatic intracranial hemorrhage (SICH) after mechanical thrombectomy (MT) is generally considered to be a critical complication. The objective of our study was to evaluate the correlation between contrast media type and incidence of SICH after ET.

Materials and Methods Consecutive 78 patients (32 men; mean 81.8 years, [range, 44 to 98]) MT successfully performed (TICI 2a-3) for acute large-vessel occlusion ischemic stroke (ICA, M1, M2) within 8 hours after symptom onset between April 2020 and March 2023 were retrospectively reviewed. Correlation between contrast media type (iso-osmolar or low-osmolar) and incidence of SICH was assessed.

Results Either iso-osmolar (n: 45) or low-osmolar (n: 33) were included. Incidence of SICH was 6.4%. SICH occurred in 1 of 45 (2.2%) in the iso-osmolar group and in 5 of 33 patients (12.1%) in the low-osmolar group (P = 0.078).

Conclusions Iso-osmolar contrast media may be associated with a lower incidence of SICH compared with low-osmolar contrast media in patients after ET.

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E-058 SURPASS STREAMLINE: TECHNICAL ADVANTAGES FOR COMPLEX FLOW DIVERSION

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Background Flow diverting devices have gained widespread use in the treatment of unruptured intracranial aneurysms. In particular, the Surpass Streamline flow diverter (SSFD) possesses four attributes, (1) utilization of an over-the-wire (OTW) delivery system, (2) greater device length, (3) larger potential diameter, and (4) propensity to open in tortuosity, that may offer an important advantage compared to other flow diverters available on the U.S. market. These characteristics can prove beneficial in the treatment of complex pathologies.

Objective This technical series aims to demonstrate how the unique attributes of SSFD can facilitate safe and effective treatment of anatomically complex cerebrovascular pathologies.

Methods A retrospective review was conducted of cases at The University of Kansas Health Systems from 2019 to 2021 in which patients underwent embolization with the SSFD system. Example cases highlighting the unique properties of the Surpass Streamline were selected for presentation.

Results We selected four cases with challenging anatomical considerations in which we leveraged the unique properties of the SSFD system. Case 1 leveraged greater potential device diameter to embolize a large, recurrent vertebral artery aneurysm. Angiography at 6-months post-treatment revealed near complete occlusion of the right vertebral artery aneurysm with complete occlusion at 1 year with the SSFD stent remaining widely patent. Case 2 leveraged greater device length and ability to open in tortuosity to manage a symptomatic 20mm cavernous carotid aneurysm. Imaging at both 6- and 12-month follow-ups revealed patent stents with no significant change in the aneurysm, but MRI at 2 years demonstrated aneurysm thrombosis. Case 3 utilized greater device diameter, length, and the OTW delivery system to treat a giant intracranial aneurysm previously treated by surgical ligation and high-flow bypass. At 5-months, the pulsatile neck mass had markedly reduced in size. Angiography at 5 months post-procedure revealed return of laminar flow as the vein graft had healed around the stent construct. The left MCA aneurysm progressed to complete occlusion around the stent construct. Case 4 employed greater diameter, length, and the OTW delivery system to treat a giant, symptomatic, dolichoectatic vertebrobasilar aneurysm. At 6 months post-procedure, the stent construct was patent. Excluded portions of the aneurysm were non-filling aside from a small area of residual aneurysm sac adjacent to the stents at the junction of the medial and superior stents. 12-month follow-up imaging revealed no further changes to construct patency or aneurysm size. All four patients tolerated the procedure with no new deficit and exhibited continual neurologic improvement over time. Embolization using the SSFD system resulted in successful and safe management in these challenging cases.

Conclusion The SSFD has several unique attributes that can prove beneficial in the management of complex cerebrovascular pathologies. Increased awareness of these attributes may allow for a larger number of cases to be treated with the proven mechanism of flow diversion.

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E-059 ENDOVASCULAR THROMBECTOMY AFTER ACUTE ISCHEMIC STROKE OF THE BASILAR ARTERY: A META-ANALYSIS OF FOUR RANDOMIZED CONTROLLED TRIALS

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Background Previous randomized controlled trials (RCTs) and meta-analyses were underpowered in demonstrating the superiority of endovascular thrombectomy (EVT) over medical therapy (MEDT) in the treatment of acute ischemic stroke due to large vessel occlusion of the posterior circulation (PC-LVO). We performed an updated systematic review and meta-analysis after the publication of the BAOCHE and ATTENTION trials to determine whether EVT can benefit patients presenting with PC-LVO.

Methods Using Nested Knowledge, we screened literature for RCTs on EVT in PC-LVO. The primary outcome was 90-day modified Rankin Scale (mRS) 0-3, and secondary outcomes included 90-day mRS 0-2, 90-day mortality, and rate of symptomatic intracranial hemorrhage (sICH). A random-effects model was used to compute rate ratios (RRs) and their corresponding 95% confidence intervals (CI).

Results Four RCTs with 988 patients, 556 patients in the EVT arm and 432 patients in the MEDT arm, were included in the meta-analysis. EVT resulted in significantly higher rates of mRS 0-3 (RR = 1.54; 95% CI: 1.16-2.04; p = 0.002) and functional independence (RR = 1.83; 95% CI: 1.08-3.08; p = 0.024), and lower rates of mortality (RR = 0.76; 95% CI: 0.65-0.90; p = 0.002) at 90-day follow-up compared to MEDT alone. However, EVT patients had higher rates of sICH (RR = 7.48; 95% CI: 2.27-24.61; p < 0.001).
Conclusions EVT conferred significant patient benefit over MEDT alone in the treatment of PC-LVO. Future studies should better define patients in whom EVT is futile and determine factors that contribute to higher rates of sICH.
Disclosures G. Adusumilli: None. **H. Kobeissi:** None. **S. Ghozy:** None. **N. Hardy:** 4; C; Nested Knowledge, Inc. 5; C; Nested Knowledge, Inc. **K. Kallmes:** 4; C; Nested Knowledge, Inc, Superior Medical Experts, Inc. 5; C; Nested Knowledge, Inc, Conway Medical LLC. **K. Hutchison:** 5; C; Nested Knowledge, Inc. **D. Kallmes:** 1; C; MicroVention, Medtronic, Balt, Insera Therapeutics. 2; C; Vesalio. 4; C; Nested Knowledge, Inc, Superior Medical Experts, Inc, Conway Medical LLC, Marblehead Medical, Piraeus Medical. 6; C; Medtronic. **W. Brinjikji:** 2; C; Johnson & Johnson, Stryker, Medtronic, MicroVention. 4; C; Marblehead Medical. 6; C; MIVI Neurovascular. **G. Albers:** 2; C; iSchemaView, Genentech. 4; C; iSchemaView. **J. Heit:** 2; C; Medtronic, MicroVention. 6; C; iSchemaView.

E-060 IMPROVED CATHETER DELIVERY TO LARGE VESSEL OCCLUSIONS USING TENZING 7 AND FREECLIMB 70 CATHETERS: INITIAL MULTI-CENTER EXPERIENCE

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Introduction/Purpose Previous large vessel occlusion (LVO) comparative thrombectomy device trials reported a substantial rate of crossover from first line aspiration thrombectomy (AT) to stent-retriever (SR) thrombectomy. Use of 0.070 inch 'large-bore' catheters for AT is associated with increased aspiration flow rates, first pass effect, faster recanalization, reduced procedure time and better reperfusion rates. A 0.070 inch distal inner diameter catheter, FreeClimb™ 70 (Route 92, San Mateo, CA), was recently introduced and comes packaged with a specialized delivery catheter with a tapered distal tip, Tenzing® 7 (Route 92, San Mateo, CA), which significantly reduces the ledge or space between itself and the tip of the access catheter. This is especially important with increased caliber of 'large bore' catheters, which have a greater tendency to catch on arterial side branches and encounter increased friction in tortuous vascular anatomy. We report our initial multicenter experience using the FreeClimb 70 delivered over the Tenzing 7 catheter in the treatment of large vessel occlusion stroke.
Materials and Methods After local IRB approval, we retrospectively reviewed and collected the clinical, procedural and imaging data of consecutive patients who underwent off-label AT with the FreeClimb 70 and Tenzing 7 at five institutions. The FreeClimb 70 and Tenzing 7 catheters were inserted as a unit into the guide catheter. After initial selective catheterization of the occluded vessel with Tenzing 7, the FreeClimb 70 was then advanced over the Tenzing catheter to the angiographic limit of contrast on roadmap angiography. The Tenzing was then removed and the FreeClimb 70 catheter was allowed to passively advance into the clot. Vacuum pump aspiration was then applied to the FreeClimb 70 for 2-5 minutes.
Results FreeClimb 70 was successfully delivered over the Tenzing 7 to the target occlusion in 25/25 (100%) of cases (15 M1 segment, 5 M2, 4 ICA-terminus, and 1 basilar artery occlusions). No stent-retrievers were needed for delivery. Median time from groin puncture to first pass was 12 (IQR 8-16) minutes. In 20/25 (80%) cases, a leading microwire was not needed to advance the Tenzing 7 to the target occlusion. First pass effect (mTICI 2C or 3) was achieved in 13/25 (52%). For M1 MCA occlusions, FPE (mTICI 2C or 3) was 9/15 (60%). After a median of 1 (IQR 1-3) pass, successful reperfusion (mTICI ≥ 2B) was achieved in 24/25 (96%) cases, with complete reperfusion (2C or 3) in 22/25 (88%). After the first pass, additional clot retrieval devices were used in 10/25 (40%) cases, including SR in 2/25 (8%) cases. Median groin puncture to reperfusion time was 16 (IQR 12-28) minutes. There were no procedural complications or symptomatic intracranial hemorrhages. NIHSS at discharge decreased on average 8.5 ± 5.5 from presentation. There were three patient deaths: due to respiratory failure, oliguric renal failure, and transition to comfort care for large core infarct.
Conclusions Initial clinical experience supports the use of the FreeClimb 70 catheter with Tenzing 7 for reliable access to intracranial LVO for rapid, effective and safe reperfusion. Further study is warranted.
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E-061 GLYCOPROTEIN INHIBITORS AS A STANDALONE POST-THROMBECTOMY RESCUE TREATMENT FOR INTRACRANIAL ATHEROSCLEROTIC DISEASE-RELATED STROKE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction Intracranial atherosclerotic disease (ICAD) is a major cause of stroke and presents a unique challenge with a high rate of reocclusion following mechanical thrombectomy, leading to less favorable clinical outcomes. When standard thrombectomy is unsuccessful, rescue treatments for persistent ICAD-related occlusion or stenosis are needed. Among the available options, glycoprotein inhibitors have shown promise as a potential therapeutic strategy in the setting of ICAD. This systematic review examines studies that explore the use of glycoprotein inhibitors as an acute standalone post-EVT rescue treatment for refractory occlusion or high-grade stenosis in the setting of ICAD stroke.
Methods Databases searched, including Embase, Pubmed, and Medline from the date of conception through March 1st, 2023. We included studies using GPI as the first-line rescue