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P154/193 **IMPACT OF STENT-RETRIEVER TIP DESIGN ON DISTAL EMBOLIZATION DURING MECHANICAL THROMBECTOMY: A RANDOMIZED IN VITRO EVALUATION**

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Introduction Repeated number of passes, clot fragmentation, and distal embolization during mechanical thrombectomy lead to worse clinical outcomes in acute ischemic stroke.

Aim of Study This study aims to assess the recanalization and embolic outcomes of different stent-retrievers (SR): open-tip SR (Solitaire X 6x40 mm), closed-tip SR (Embotrap II 5x33 mm), and filter-tip SR (NeVa NET 5.5x37 mm).

Methods Stiff-friable clot analogs were used to create middle cerebral artery (M1-MCA) occlusions in a benchtop model. After occlusion, experiments were randomized into one of the three treatment arms. The thrombectomy technique consisted of retrieving the SR into a balloon guide catheter under proximal flow arrest and continuous aspiration. A total of 150 single-attempt cases were performed (50 cases/treatment arm). Distal emboli (>100µm) were collected and analyzed after each experiment.

Results Filter-tip SR achieved a higher first-pass recanalization rate than open-tip SR and closed-tip SR (66% vs. 48% vs. 44%; $p=0.064$). Filter-tip SR prevented clot fragments >1 mm from embolizing distal territories in 44% of cases, compared to 16% in open-tip SR and 20% in closed-tip ($p=0.003$). There were no significant differences between treatment arms in terms of total emboli count (open-tip=19.2 ±13.1, closed-tip=19.1±10.7, filter-tip=17.2±13.0; $p=0.660$). Nonetheless, the number of large emboli (>1 mm) and total area of emboli were significantly lower in the filter-tip arm ($n=0.88±1.2$, $A=2.06±1.85$ mm²) than in the closed-tip ($n=2.34±3.38$, $A=4.06±4.80$ mm²), $p<0.05$.

Conclusions When facing fragment-prone clots, the filter-tip SR significantly reduces the number of large clots (>1 mm) that embolize distally during an MT procedure, potentially increasing the chances of first-pass complete recanalization.

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P155/200 **USEFULNESS OF QUADRI-AXIAL SYSTEM IN MECHANICAL THROMBECTOMY IN ACUTE ISCHEMIC STROKE: REDEFINING THE BOUNDARIES OF TRANS-FEMORAL ACCESS**

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Introduction Tri-axial system (TAS) via trans-femoral access (TFA) is widely used for mechanical thrombectomy (MT) in acute ischemic stroke (AIS). Quadri-axial system (QAS) via TFA has been rarely reported and not systematically described. **Aim of Study** To demonstrate safety and effectiveness of QAS compared with TAS for MT.

Methods We retrospectively analyzed 321 consecutive patients who underwent MT for AIS at our Institution from August 2019 to December 2022. Patients were divided in two groups: TAS (using short 8F sheath) and QAS (using long 8F sheath). Puncture to recanalization time, number of passes for recanalization, mTICI score, technical failure due to aortic arch/vessel anatomy, complication rate were compared.

Results TAS was used in 179 patients and QAS in 142 patients. Mean procedure duration was 53.2 minutes in TAS and 43.64 minutes in QAS group. In TAS group procedure was completed in 96% (n=172) and abandoned in 1.67% (n=3) for challenging vascular anatomy. In QAS group procedure was completed in 99% (n=141); none was abandoned due to vascular anatomy. Favourable recanalization was reported in 62% (n=107) in TAS and in 81% (n=115) in QAS group. First pass recanalization was achieved in 42% (n=75) in TAS and 51% (n=75) in QAS group. Complication rate (4%) was similar in both groups.

Conclusion QAS via TFA for MT in AIS is a safe and effective technique, even in challenging cases, allowing faster and more successful procedures without increasing complications. QAS could redefine and widen the boundaries of TFA in AIS.

Disclosure of Interest Nothing to disclose.

P156/208 **ASSOCIATION BETWEEN ARTERIAL DIAMETER AND OUTCOME IN ACUTE M2 OCCLUSIVE ISCHEMIC STROKE PATIENTS TREATED WITH ENDOVASCULAR THROMBECTOMY**

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Introduction Clinical outcome is differed by the occluded location of M2 segment in endovascular thrombectomy (EVT). However, there is no report about the association between arterial diameter and outcomes.

Aim of Study We aimed to evaluate the relationship between arterial diameter of acute M2 occlusive patients treated with EVT and the outcomes.

Methods Using a prospective single center EVT registry, we identified acute M2 occlusion treated with EVT from 2011 to 2016. Diameter was measured at the proximal occluded