Direct Aspiration First Pass Technique

- Macrowire-only direct aspiration first-pass technique for endovascular mechanical thrombectomy: Multicenter technical series using the 0.035" aristotle Colossus wire
- Aspiration Catheter Design Impacts Combined Approach Mechanical Thrombectomy in Anterior Circulation Large Vessel Stroke
- Initial experience using the Passerelle 21 microcatheter for the Red 43 reperfusion catheter navigation in distal medium vessel occlusion: A technical case report
- Mechanical Thrombectomy for Large Vessel Occlusion Strokes Involving a Cerebral Aneurysm in the Target Vessel: Case Series
- First in-human use of super large-bore novel 0.092-inch catheter positioned in M1 segment of middle cerebral artery for aspiration thrombectomy
- Middle Cerebral Artery M2 Occlusions: Impact of Segment Dominance and Benefit of Direct Aspiration for the First-Pass Effect
- The ASCEND Technique-A Modified Direct Aspiration First Pass Technique for a Faster and Cost-effective Mechanical Thrombectomy
- A direct aspiration first-pass technique (ADAPT) for acute ischemic stroke thrombectomy: Indications, technique, and emerging devices

Recent randomized trials have demonstrated the efficacy of mechanical thrombectomy in acute ischemic stroke treatment, however, further research is required to optimize this technique. Navia et al. aimed to evaluate the impact of guide catheter position and clot crossing on revascularization rates using A Direct Aspiration First Pass Technique (ADAPT).

Data were collected between January 2018 and August 2019 as part of the Spanish ADAPT Registry on ACE reperfusion catheters (SARA), a multicenter observational study assessing real-world thrombectomy outcomes. Demographic, clinical, and angiographic data were collected. Subgroup analyses assessed the relationship between guide catheter/microguidewire position and modified Trombolysis in Cerebral Infarction scale. First pass effect (FPE) was defined as mTICI 3 after single pass of the device.

Results: From a total of 589 patients, 80.8% underwent frontline aspiration thrombectomy. The median score on the National Institutes of Health Stroke Scale (NIHSS) was 16.0. After adjusting for confounders, the likelihood of achieving FPE (adjusted Odds Ratio (aOR), 0.587; 95% confidence interval (CI), 0.38 to 0.92; p=0.0194) were higher among patients with more distal petrocavernous placement of guide catheter. The likelihood of achieving FPE (aOR, 0.592; 95% CI, 0.39 to 0.90; p=0.0138) and final angiogram complete reperfusion (aOR, 0.465; 95% CI, 0.30 to 0.73; p=0.0008) were higher among patients without microguidewire crossing the clot. No difference was noted for time from arterial puncture to reperfusion in any study group. At the 90-day follow-up, the mortality rate was 9.2% and 65.8% of patients across the entire study cohort were functionally independent (modified Rankin Scale (mRS) 0-2).

Petrocavernous guide catheter placement improved first-pass revascularization. Crossing the occlusion with a microguidewire lowered the likelihood of achieving FPE and complete reperfusion after final angiogram [1)]

1)

Navia P, Espinosa de Rueda M, Rodriguez-Benitez A, Ballenilla Marco F, Pumar JM, Gallego-Leon JI, Diaz-Valiño JL, Mendez JC, Hernández Fernández F, Rodriguez-Paz CM, Hernandez D, Maynar FJ, Vega-Villar J, García-Benassi JM, Martínez-Galdámez M, Larrea JA, Fernandez-Prieto A. Endovascular

thrombectomy first-pass reperfusion and ancillary device placement. J Neurointerv Surg. 2023 Aug 22:jnis-2023-020433. doi: 10.1136/jnis-2023-020433. Epub ahead of print. PMID: 37607823.