higher than in those without hemorrhage, but the difference was not statistically significant (53.8 mm Hg vs 47.0 mm Hg, p=0.13). Systemic mean pressure was found to correlate with AVM size (r=-0.31, p=0.037). Significant predictors of feeder artery pressure were systemic pressure, AVM size, and the distance of microcatheter from the circle of Willis. Meanwhile, the presence or absence of venous outflow stenosis and the position of the AVM nidus (superficial or deep to the cortical surface) were the most significant predictors of AVM hemorrhage vs seizures. **Conclusions:** Anatomic factors may be more important than arterial hemodynamic factors in determining the clinical presentation of cerebral AVMs.

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Competitive Flow Diversion: Proposed Classification System

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Background: Competitive flow diversion (CFD) is a novel application of flow diversion stenting (FDS), redirecting flow into a normal artery proximal or distal to the aneurysmal parent artery. A classification system for CFD has not been previously reported. **Methods:** Report of operative technique and novel classification system for CFD. **Results:** A patient with subarachnoid haemorrhage and three aneurysms arising from the Pcomm-P1 complex, was treated with endovascular coiling and CFD. The PCOM aneurysm was coiled. Two aneurysms arose from the distal right P1- PCA. After a failed attempt to treat with FDS across the P1-PCA, the P1-aneurysms were successfully treated with CFD distal to the P1-PCA, from Pcomm to P2. Over 12 months, CFD redirected flow via ICA-Pcomm-P2, reducing the size of the P1-PCA, obliterating the P1-aneurysms. Herein, we classify competitive flow diversion into two types. Type I CFD is when the parent artery harbouring the aneurysm is "jailed" proximally. Type II CFD occurs when flow is diverted from the parent artery distal to the aneurysm origin. **Conclusions:** Herein, we propose a novel classification for CFD. We describe the first case of aneurysm occlusion in the circle of Willis with Type II CFD, and use of CFD for the treatment of multiple adjacent aneurysms.

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In search of real-world neuroprotection in mechanical thrombectomy for ischemic stroke

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Background: The promise of neuroprotection for stroke remains elusive. Common medications in endovascular stroke thrombectomy have putative neuroprotective mechanisms in basic science literature. We evaluated our stroke registry for evidence that these medications have any impact on clinically meaningful outcome. **Methods:** A retrospective stroke thrombectomy database was evaluated for clinical and angiographic outcomes of patients receiving IV or IA tPA, Heparin, or Verapamil during procedure. Univariate analysis evaluated associations with periprocedure hemorrhage, recanalization, and functional outcomes. **Results:** 284 patients underwent mechanical thrombectomy over 2.75 years. For periprocedural hemorrhage, IV tPA (OR 0.457, CI 0.261-0.811, p=0.008) and Heparin (1.897, CI 1.112-3.205, p=0.019) had significant relationships. No medication had impact on favorable recanalization (TICI 2b/3). Heparin had a negative impact on 90day mRS 0-2 (OR 0.563, CI 0.348-0.901, p=0.023). Favorable recanalization remains associated with favorable outcomes at 90days (OR 2.066, CI 1.063-4.069, p=0.0361). **Conclusions:** While the adjunctive use of 3 commonly used periprocedural medications have a logical role in the mechanical thrombectomy eg IA tPA for clot lysis, they do not have clinical benefit that represents neuroprotection. Multivariate analysis may show more effect. A role for intraarterial neuroprotective agents exists given only 45% of patients in this series achieved functional independence.

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Giant aneurysm, tiny patient: flow diversion stenting of a giant MCA aneurysm in a young child

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Background: A 3-year-old girl presented with a 6-day history of severe headaches. On examination, upper motor neuron signs were noted in the left upper and lower extremities with increased tone, reflexes, and a positive Babinski sign. MRI of the brain revealed a giant right middle cerebral artery (MCA) aneurysm with significant mass effect, associated with cerebral edema and ventricular effacement. CT and CT angiogram showed evidence of aneurysmal wall calcification and lamellar thrombosis within the aneurysmal sac. In addition, there was a smaller right MCA aneurysm in close proximity to the giant aneurysm. **Methods:** After a balloon occlusion test to assess collateral blood flow to the MCA territory, it was decided to treat both aneurysms with a flow diverting stent. Dual antiplatelet loading was done with aspirin and clopidogrel. The smallest available diameter of Pipeline Shield stent was deployed. **Results:** The patient remained neurologically unchanged. Early follow-up imaging demonstrated stent patency, reduced size and mass effect of the large aneurysm, reduced cerebral edema, and no flow into the smaller aneurysm. **Conclusions:** Flow diversion stenting may be employed successfully in pediatric patients, though has unique technical considerations including small size vessels and limited evidence for antiplatelet agent choice and dosing.