

aneurysms, they are a very rare cause of temporal lobe seizures. **Methods:** Here, we report a rare case of temporal lobe epilepsy caused by an unruptured aneurysm. We also present a review of the literature yielding two similar cases. **Results:** A previously well 56 year old male presented to a neurologist with symptoms consistent with temporal lobe epilepsy. He was started on carbamazepine and underwent imaging and neuropsychological assessments. An MRI suggested the existence of a 7mm posterior cerebral artery aneurysm arising from the P2 segment of the posterior cerebral artery and projecting into the parahippocampal gyrus. This was also confirmed with CT angiography and the patient elected to have the aneurysm clipped. **Conclusions:** Temporal lobe epilepsy is an uncommon presentation for unruptured cerebral aneurysms. We report a rare case wherein a laterally pointing PCA aneurysm was buried in the posterior parahippocampal gyrus. This aneurysm had caused perifocal gliosis leading to stereotyped seizures. Post-operatively, the patient has been seizure free.

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Choosing Endovascular Treatment or Thrombolysis in Patients with Pre-stroke Comorbidities: UNMASK EVT, a Worldwide Survey

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Background: Decisions to treat large-vessel occlusion with endovascular therapy(EVT) or intravenous alteplase depend on how physicians weigh benefits against risks when considering patients' pre-stroke comorbidities. **Methods:** In an international survey, experts chose treatment approaches under current resources and under assumed ideal conditions for 10 of 22 randomly assigned case-scenarios. Five included comorbidities (metastatic/non-metastatic cancer, cardiac/respiratory/renal disease, non-disabling/mild cognitive impairment[MCI], physical dependence). We examined scenario/respondent characteristics associated with EVT/alteplase decisions using multivariable logistic regressions. **Results:** Among 607 physicians(38 countries), EVT was favoured in 1,097/1,379(79.6%) responses for comorbidity-related scenarios under current resources versus 1,510/1,657(91.1%,OR:0.38, 95%CI.0.31-0.47) for six "level-1A" scenarios (assuming ideal conditions:82.7% vs 95.1%, OR:0.25,0.19-0.33). However, this was reversed on including all other scenarios(e.g. under current resources:3,489/4,691[74.4%], OR:1.34,1.17-1.54). Responses favouring alteplase for comorbidity-related(e.g.75.0% under current resources) scenarios were comparable to level-1A scenarios(72.2%) and higher than all others(60.4%). No comorbidity-related factor independently diminished EVT-odds. MCI and dependence carried higher alteplase-odds; cancer and cardiac/respiratory/renal disease had lower odds. Relevant respondent characteristics included performing more EVT cases/year (higher EVT, lower alteplase-odds), practicing in East-Asia (higher EVT-odds), and in interventional neuroradiology(lower alteplase-odds vs neurology). **Conclusions:** Moderate-to-severe comorbidities did not

consistently deter experts from EVT, suggesting equipoise about withholding EVT based on comorbidities. However, alteplase was often foregone when respondents chose EVT.

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Development and Testing of a Novel Hydrogel Embolization Treatment for Neurovascular Diseases: Preliminary Animal Results

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Background: Embolization represents a minimally invasive treatment modality for arteriovenous malformations (AVMs), tumors, aneurysms, and vessel sacrifice, but can be limited by currently available embolization agents. Discovery of new and improved agents could lead to better treatment outcomes. The goal of this project was to develop and test a novel embolization agent using hydrogels, a class of materials which may be bioengineered to suit a variety of indications. **Methods:** We devised a method of liquid hydrogel embolization with photo-modulated crosslinking for intravascular solidification, using a custom microcatheter set-up. We tested this in swine blood vessels (n=3), the swine renal arterial trees as a vascular tumor model (n=5), and the swine arterial-arterial networks of the rete mirabile as an AVM model (n=3). Hydrogel embolization was assessed for treatment efficacy and safety. Follow-up angiography was performed at 2-4 week intervals. **Results:** Hydrogel embolization was technically successful in all animals, with full occlusion of the vascular target immediately following embolization and at follow-up. There were no instances of clinical or angiographic complications. **Conclusions:** We demonstrated a novel method of dynamic photomodulation and delivery of bioengineered hydrogels to address current limitations of endovascular embolization therapies. This promising technology will be investigated further with longer-term comparative animal trials.

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Arterial Hemodynamics and the Clinical Presentation of Cerebral Arteriovenous Malformations

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Background: Arterial Hemodynamics have been implicated in hemorrhage from cerebral arteriovenous malformations (AVMs). The correlation between hemodynamic characteristics and the tendency of AVMs to rupture has been explored in the past, and various theories have been proposed to explain the clinical presentation of AVMs as a hemorrhage vs. seizure. **Methods:** We monitored feeder artery pressures in 45 patients with AVMS (16 presenting with hemorrhage, 29 without) during super selective angiography and AVM embolization. **Results:** Mean feeder artery pressure (FP) was found to be 49mm Hg. The mean FP in patients presenting with hemorrhage was somewhat