



Abstract E-205 Figure 1 Left vertebral artery angiogram demonstrating basilar artery occlusion (left). Post thrombectomy angiogram showing revascularization (right)

thrombectomy with aspiration catheter alone without guide sheath or shuttle. This case demonstrates the use of 5 Fr SOFIA intermediate catheter for mechanical thrombectomy, and the efficacy of mechanical thrombectomy in basilar tip occlusion in a 2-year-old child.

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E-206 MANAGEMENT OF AGGRESSIVE POSTERIOR FOSSA DURAL ARTERIOVENOUS FISTULAS: A SINGLE CENTER EXPERIENCE

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Introduction Excluding dural arteriovenous fistulas of the transverse-sigmoid sinus junction, posterior fossa dural arteriovenous fistulas (dAVF) are rare and dangerous cerebrovascular lesions to treat. They demonstrate a high risk of hemorrhage and develop in vasculature which supply several eloquent structures. Posterior fossa dAVFs frequently exhibit cortical or subarachnoid venous drainage and are located in technically challenging locations. Here, we review our experience with the management of these complex vascular lesions.

Methods A single multi-center health system retrospective chart review identified all patients from January 2015 to December 2022 who presented with posterior fossa dAVFs that did not drain to the transverse-sigmoid junction. Clinical data, structural and hemodynamic characteristics of the dAVF, rate of favorable clinical outcomes defined as a modified Rankin Scale (mRS) of 0-2, and technical parameters including anatomic or surgical approach, embolic agent used, complications, and embolization success were reviewed.

Results Out of 208 patients treated for dAVF, 29 patients (13.94%) presented with posterior fossa dAVF that did not drain to the transverse-sigmoid junction. 18/29 (62.07%) of dAVFs were located on the tentorium while 11/29 (37.93%) of dAVFs were located on the skull base. Patients mostly presented with benign symptoms such as posterior headache, but 2 patients (6.9%) presented due to rupture of their dAVF with associated hemorrhage. 67.74% of the dAVFs demonstrated cortical or subarachnoid venous drainage: 11 Cognard

type III, 9 Cognard type IV, and one Cognard type V. 17 patients received endovascular embolization (58.62%). 68% of embolizations were transarterial alone, 16% were transvenous alone, and 16% were performed with a combined transarterial and transvenous approach. Ethylene vinyl alcohol copolymer (EVOH) was the most common embolic agent, utilized in 72% of embolizations. Technical success was achieved in 23/25 (92%) embolizations, with both failures occurring due to vessel tortuosity preventing transarterial navigation. 11 patients (37.93%) patients received at least one open surgery for ligation of their fistula: 6 patients received a suboccipital craniotomy, 4 received a middle fossa transtentorial craniotomy, 2 received a retrosigmoid craniotomy, and 1 patient received a decompressive hemicraniectomy due to rupture of their dAVF. On subsequent angiography, 4 patients (13.8%) demonstrated recurrence of a posterior fossa dAVF after surgical obliteration with a change in venous drainage pattern from the venous sinuses to a cortical venous drainage consistent with Cognard type III. This required further open or endovascular intervention with eventual obliteration of the recurrent fistula. On long-term clinical follow-up, 75.86% of patients demonstrated favorable clinical outcomes.

Conclusion Surgical intervention was often indicated for posterior fossa dAVFs and a small percentage of fistulas recurred with pathological venous drainage patterns. Careful patient selection and preoperative planning are necessary to ensure favorable clinical outcomes.

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E-207 ENDOVASCULAR THROMBECTOMY VERSUS MEDICAL MANAGEMENT FOR LARGE VESSEL OCCLUSION STROKE PATIENTS WITH SEVERE BASELINE DISABILITY: LONG-TERM OUTCOMES AND TRANSITIONS TO COMFORT CARE

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Introduction Patients with baseline disability account for up to one-third of stroke presentations. Despite growing evidence supporting their benefit from endovascular thrombectomy (EVT), there remains controversy in treatment selection. We compared the long-term outcomes and the likelihood of comfort care for large vessel occlusion (LVO) stroke patients who presented with severe baseline disability treated with EVT versus medical management.

Methods Individuals who presented with LVO were identified from a prospectively maintained database from January 2017 to December 2020. Severe baseline disability was defined as modified Rankin Scale (mRS) 3-5. Delta mRS was defined as the difference between baseline and 90-day mRS. Logistic and ordinal regressions were performed to evaluate the relationships between EVT and outcomes.

Results A total of 175/1007 (17%) patients were identified with severe baseline disability. The median age was 82 (IQR 70-89), and 59% were female. Thirty-two (18%) patients with severe baseline disability were treated with EVT. EVT was independently associated with improved delta mRS ($B=-1.048$; 95%CI= $-1.777,-0.318$; $p=0.005$) when accounting for age and NIHSS. However, EVT did not reduce the odds of transitioning to comfort care (aOR=0.794; 95%CI=0.347,1.818; $p=0.585$) when accounting for age and NIHSS. Seventy-six (43%) patients with severe baseline disability were transitioned to comfort care. Of the 99 patients who were not transitioned to comfort care, 18 were treated with EVT. In this subgroup not transitioned to comfort care, EVT was independently associated with improved delta mRS ($B=-2.794$; 95% CI= $-4.002,-1.586$; $p<0.0001$) when accounting for age and NIHSS.

Conclusions Among patients with severe baseline disability, EVT is associated with less post-stroke accumulated disability without limiting transitions to comfort care. EVT is compatible with goal-concordant care in patients with severe baseline disability; it should not be routinely withheld on the sole basis of baseline disability.

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E-208 FLOW DIVERTERS IN TREATMENT OF CEREBRAL ANEURYSMS

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Background Endovascular approach is one of the ways to successfully treat cerebral aneurysms. Currently, there are various techniques and devices to increase the radicality of endovascular treatment. Despite the variety of available techniques, in recent years, flow diverters (FDs) have been increasingly preferred as a method for treating cerebral aneurysms.

Materials and Methods From January 2011 to March 2023 at E.Meshalkin National Medical Research Center, Novosibirsk, and Federal Center of Brain Research and Neurotechnologies, Moscow, 3803 endovascular operations to treat cerebral aneurysms were performed. 1009 (26.4%) FDs were implanted, and in the rest of the cases, the patients were treated using other embolization techniques. A retrospective analysis of the results obtained with FDs was carried out.

Results The technical success was 96.8%. The frequency of at which FDs were preferred to other techniques to treat cerebral aneurysms for 2011-2015 was 16.7% ($n=164$), and 28.1% ($n=489$) for 2016-2020. In 2021, FDs were implanted in 29.6% ($n=149$) of cases. From 2022 to March 2022, this technique was used in 36.4% ($n=227$) of the operations performed. According to the control studies (at median 9 months), total occlusion in the entire series has been achieved in 78.1% of cases ($n=788$), while some patients ($n=164$) are still waiting for their controls to be performed. For all FD interventions, a severe neurological deficit has comprised 1.09%, and mortality 0.4%.

Conclusion FD implantation is an effective and safe endovascular technique to treat cerebral aneurysms. Our experience shows that in recent years there has been a trend towards an increase in the number of implanted FDs if compared to other applied techniques without reducing the radicality and safety of endovascular treatment. The variety of currently available FDs, their technical capabilities, and improved delivery catheters make the embolization more convenient, reduce the operation time as well as the radiation and contrast loads. However, despite FD's apparent simplicity, the need for anti-platelet therapy in the postoperative period and the restrictions on their use in the distal parts of the Willis circle and bifurcation aneurysms, not to mention their high price, still limit application of this treatment method, so further studies are required to expand the indications for the use of FDs.

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E-209 COMPARATIVE ANALYSIS OF THE VASODILATORY EFFECTS OF ENTERAL NIMODIPINE AND TADALAFIL IN AN ANIMAL MODEL OF CEREBRAL VASOSPASM

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Background Cerebral vasospasm is one of the most fatal complications after spontaneous aneurysmal subarachnoid hemorrhage. Although various treatments have been tried for the treatment of cerebral vasospasm so far, the effect is insignificant or temporary except for oral nimodipine. Phosphodiesterase isozyme type 5 inhibitor, which is used to treat erection dysfunction, recently has been known to have a cerebrovascular vasodilation. It is thought that this will be effective in cerebral vasospasm, and the effect will be compared and analyzed with oral nimodipine through an animal model of cerebral vasospasm.

Methods A total of 40 rabbits were used to make subarachnoid hemorrhage model and were divided into three groups - a control group, nimodipine group, and tadalafil group. The cerebral vessels were angiographically measured before and on the third day of subarachnoid hemorrhage. Then vertebrobasilar arteries were harvested and evaluated. Under the microscope, lumen area and media area were measured for each group and were compared.

Results Angiographically, tadalafil group showed significant vasodilation compared with the control group ($p<0.01$). Histologically, tadalafil showed a similar effect on lumen and on media area to that of nimodipine group compared with the control group.