embolization with liquid embolic agents PHIL and Squid. Functional outcomes, morbidity and mortality were assessed after embolization. Patient demographics, imaging and embolization records were reviewed. Statistical analysis was performed with SPSS™Version 28.0 (IBM Corp., Armonk, New York).

**Results** A total of 23 patients with cerebral AVM were treated with 34 sessions of endovascular embolization with liquid embolic agents of either PHIL or Squid (17 sessions each) with male to female ratio of 2.3:1 (male 16; female 7) and mean age of 44.6 (range from 12 to 67). Mean total nidus obliteration rate per session was 57% (range from 5% to 100%). 21 patients (91.3%) received further embolization, stereotactic radiosurgery or surgical excision after initial endovascular embolization. There was 2 morbidities (one neurological and one non-neurological, 6%) and no mortality (0%). All patients had static or improvement in modified Rankin Scale at 3 to 6 months upon discharge.

**Conclusions** PHIL and Squid are effective and safe liquid embolic agents for endovascular embolization of cerebral AVM, achieving satisfactory nidal obliteration rate and functional outcomes.

**REFERENCES**

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**Abstracts**

**P39**

**ENDOVASCULAR TREATMENT OF ARTERIOVENOUS MALFORMATION AND CAROTID STENOSIS BY DIRECT CAROTID PUNCTURE SIMULTANEOUSLY**

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Do you have any conflict of interest to declare?: No

**P40**

**SYMPTOMATIC FORAMINAL AVM ASSOCIATED WITH GIANT LYMPHANGIOMA: A CASE REPORT AND REVIEW OF THE LITERATURE**

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10.1136/neurintsurg-2022-ESMINT.61

**Introduction** Congenital vascular malformation (CVM) incidence is 0.3–1.5%. The International Society for the Study of Vascular Anomalies (ISSVA) categorizes Vascular malformations into simple, combined, anomalies of named major vessels and vascular malformations associated with other anomalies.

Combined vascular malformations are defined as two or more vascular malformations found in one lesion, and they represent 5.7% of congenital vascular malformations.

The literature review showed only case reports about combined vascular malformations due to the low incidence of the pathology.

**Case description** A 24-year-old patient presented with a giant lymphangioma of the left shoulder, upper arm, back, left hemithorax, mediastinum, and neck. Multiple partial resections and laser treatments were done before.

The recent neurological examination showed hypesthesia of both legs and a positive Babinski sign. Due to worsening paraplegia, the patient was confined to a wheelchair.

An older MRI showed a giant lymphangioma involving the left arm and hemithorax, and a recent MRI showed a vessel with a flow void signal abutting the spinal cord between C7 and Th1 on the right side. Angiography was performed after an interdisciplinary case discussion, and it showed an extramedullary AVM with an intraspinal draining vein. The malformation was successfully embolized with Onyx (pressure cooker technique).

**Conclusion** A long history of lymphatic malformation with previous treatments does not exclude association with another malformation. Worsening neurological symptoms led to angiography, which was the clue for diagnosis and successful treatment. Although we had no recent histology, the lesion treated is probably categorized under CMLMAVM.

**REFERENCES**

Do you have any conflict of interest to declare?: No
Aim of the Study To compare the functional outcome at 6 months of interventional vs medical management in patients with BAVMs in a tertiary care hospital in Mexico.

Methods We performed a retrospective observational study at the Instituto Nacional de Neurología y Neurocirugía in Mexico City from January 2016 to October 2021. The population was classified according to the type of treatment in: embolization, surgery, radiosurgery and medical management. Functional outcome (FO) was assessed with the modified Rankin scale (mRS) at 6 months as good (0–2) or bad (3–6).

Results Of 320 patients (mean [SD] age, 36.4 [13.7] years; 189 women [59.1%]) with BAVMs, 174 (54.3%) presented with headache, 158 (49.3%) with seizures and 51 (15.9%) with focal neurological deficit. By neuroimaging, 128 (40%) had intracerebral hemorrhage, and the most frequent Spetzler-Martini grading scale were II (98 [30.6%]) and III (105 [32.8%]). FO was good in: 43 (60.5%) of 71 embolized patients, 83 (77.5%) of 107 submitted to surgical resection and in 78 (77.2%) of 101 treated with radiosurgery. When comparing interventional treatment with medical management, FO was better in interventional treatment (67 [68.2%] versus 78 [31.8%]; p = 0.018).

Conclusions in our study FO of BAVMs was better in patients submitted to interventional treatment compared to medical management alone.

REFERENCES

Do you have any conflict of interest to declare?: No

P42 ENDOVASCULAR TREATMENT OF BRAIN ARTERIOVENOUS MALFORMATIONS USING PRECIPITATING HYDROPHOBIC INJECTABLE LIQUID (PHIL)

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10.1136/neurintsurg-2022-ESMINT.63

Introduction Application of liquid embolic agents (LEAs) is a method of choice for endovascular treatment of cerebral arteriovenous malformations (AVMs).

Materials and methods Since January 2011, our team has treated 787 patients with cerebral AVMs in two large medical centers of Novosibirsk and Moscow. 41 (5.2%) of these patients were treated using only the PHIL agent (Spetzler-Martini I–III), in 29 (70.7%) of them the treatment was finalized and 12 (29.3%) are undergoing further treatment. In the presented paper, the results of the 29 patients are considered.

Results Radical endovascular AVM occlusion was achieved in 17 (58.6%) of these patients. A one-stage procedure was performed in 14 (48.3%) patients, a two-stage – in 3 (10.35%). Subtotal thrombosing of AVM node was achieved in 7 (24.1%) patients. Later these nodes were surgically removed. 5 (17.2%) patients underwent radiosurgical treatment after subtotal AVM occlusion. A perioperative hemorrhage was registered in 1 patient that comprises 2.6% of the total number of endovascular procedures performed. The clinical outcomes in the majority of patients corresponded to mRS 0–1 (96.6%, n = 28). A rough neurological deficit (total aphasia) in the postoperative period was noted in 1 patient (3.45%). In the series were no cases of mortality.

Conclusion Using PHIL as the only LEA during endovascular treatment of cerebral AVMs enables one to obtain good angiographic and clinical results. Application of this agent provides high primary radicality and reduces the number of endovascular stages to achieve expected AVM occlusion, which significantly decreases complication risks and radiation exposure for a patient.

REFERENCES

P43 SUCCESSFUL IMPLANTATION OF A PERIPHERAL STENT IN A DURAL ARTERIOVENOUS FISTULA (DAVF) OVER A J-SHAPED 0.035” STEEL-WIRE

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Clinical history/pre-treatment-imaging We report a successful implantation of a peripheral stent in a dural arteriovenous fistula (dAVF) over a j-shaped 0.035” steel-wire (Rosen). The patient was a 61-year old male presenting with a known dAVF Cognard 2b in the right sigmoid sinus. The jugular vein was thrombosed intracranially.

Treatment options/results Combined trans-arterial and transvenous balloon-protection would have been first line option, but the fistula was extensive along the transverse sinus and antegrade access was not easy to achieve due to vein thrombosis. Therefore an approach leading to downgrading (to Type I-fistula) and permanent re-opening of the jugular vein was identified as the better treatment option. Direct jugular vein puncture was carried out, the vein was catharized as far cranially as possible with a 4-french glide catheter and a Rosen steel wire (Radifocus, Tokyo, Japan) was used to reach the superior sagittal sinus (SSS). An Optimed sinus superflex-stent from the transverse sinus to the right JV was implanted. Post-implantation angiogram showed a significantly reduced flow in the feeding vessels[PM1] and antegrade venous drainage of the right hemisphere. At three months the drainage was still patent and the fistula reduced to a type 1-fistula.

Discussion In a challenging vascular anatomy we demonstrated feasibility of successful stent implantation in a dAVF over a 0.035” steel-wire with a residual Cognard 1 situation.

Take-home points We demonstrate that large diameter wires may be used safely in venous sinuses and that stenting of dural

Do you have any conflict of interest to declare?: No