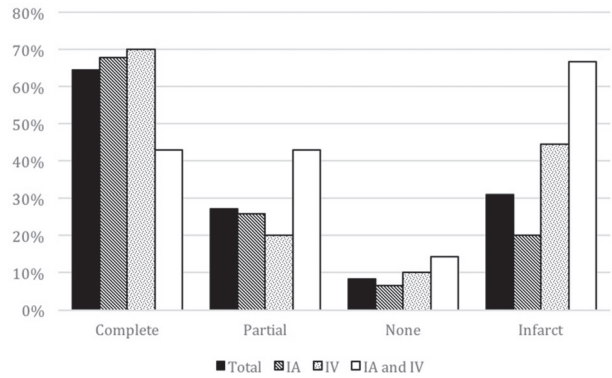


Abstract O-034 Figure 1 Frequency of complete, partial, or no angiographic improvement and frequency of postoperative infarction following intraoperative abciximab administration

angiographic resolution (Figure 1). Only 8% (4/48) cases failed to improve angiographically. Angiographic outcomes were similar in patients who received IA, IV, or combined IA and IV administration of abciximab intraoperatively ($p = 0.58$), or patients who did or did not receive continuous IV infusion of abciximab postoperatively ($p = 0.11$). Postoperative infarction was seen in 20% (5/25), 44% (4/9), and 67% (4/6) following IA, IV, and combined IA and IV abxicimab, respectively ($p = 0.06$) (Figure 1). The rate of postoperative infarction was 33% (2/6) in patients who received continuous IV infusion of abciximab postoperatively and 32% (11/34) in those who did not ($p = 1.00$). Postoperative infarction developed in 8% (2/24) patients with complete angiographic improvement, compared to 69% (11/16) in patients with partial or no improvement ($p < 0.0001$).

Conclusion Abciximab administration is an effective method of treating thromboembolic complications of neuroendovascular procedures. Angiographic outcomes were not appreciably different between different routes of abciximab administration. Infarction was least common in patients treated with IA abciximab; the addition of postoperative abciximab infusion did not affect the rate of infarction. No or partial angiographic improvement was associated with significantly higher rates of postoperative infarction than complete angiographic improvement.

Disclosures A. Kansagra: None. **T. Madaelil:** None. **D. Cross:** None. **C. Moran:** 2; C; Medtronic Neurovascular. 3; C; Medtronic Neurovascular. **C. Derdeyn:** None.

O-035 SAFE (SAFETY AND EFFICACY ANALYSIS OF FRED EMBOLIC DEVICE IN ANEURYSM TREATMENT): STUDY DESIGN AND PRELIMINARY RESULTS

L Pierot, J Gauvrit, J Lejeune, A Derelle, J Gabrillargues. *Radiology, Hôpital Maison-Blanche, Reims, France*

10.1136/neurintsurg-2016-012589.35

Purpose Flow diversion is now a well-established endovascular technique for the treatment of intracranial aneurysms. FRED and FRED Jr are dual-layer, self-expanding nickel titanium flow-diverters. SAFE is a prospective, multicenter study conducted in 14 French and Belgian centers to evaluate the safety and efficacy of these devices.

Materials and methods Only aneurysms located in the anterior circulation were included. The primary efficacy endpoint is the rate of complete aneurysm occlusion at 6 months without associated stenosis of the parent vessel. The primary safety endpoint is the rate of morbidity (mRS > 2) and mortality at 6 months. Adverse events as well as anatomical results will be independently evaluated. According to the endpoints, the target population is 85 patients, now extended to 95/100.

Results Inclusions started in July 2014. End of February 2016, 92 patients with 92 aneurysms were included. The expectation is to have inclusions completed end of April 2016. Most patients were females (80/92, 87.0%). All but one patient were mRS 0 or 1 before the treatment.

Among the 92 aneurysms, 22 (23.9%) were aneurysm remnant after a previous treatment and the 70 others (76.1%) were unruptured. Aneurysm locations were internal carotid artery (n = 83, 90.2%), anterior communicating artery (n = 6, 6.5%), and middle cerebral artery (n = 3, 3.3%). Aneurysm size was <10 mm in 57 aneurysms (62.0%), 10 to 24 mm in 31 aneurysms (33.7%), and >24 mm in 3 aneurysms (3.3%).

Neck size was <4 mm in 24/91 aneurysms (26.4%) and > or = 4 mm in 67/91 aneurysms (73.6%).

Placement of the flow diverter was achieved in all cases. Intra-operative events were reported in 7/92 patients (7.6%), including technical problems (n = 3), thromboembolic events (n = 3), and others (n = 1). Postoperative events, morbidity, and mortality are also analyzed. Preliminary anatomical results (at 6 months) are presented.

Conclusion SAFE is an ongoing GCP (Good Clinical Practice) study aiming to evaluate safety and efficacy of FRED flow diverter in aneurysm treatment. Inclusions are close from completion. As of now, the safety of the FRED as evaluated by the CEC seems to be in line with published results for Flow Diversion technique.

Disclosures L. Pierot: 2; C; Microvention. **J. Gauvrit:** 2; C; Microvention. **J. Lejeune:** 2; C; Microvention. **A. Derelle:** 2; C; Microvention. **J. Gabrillargues:** 2; C; Microvention.

O-036 RUPTURED ANEURYSMS OF COLLATERAL VESSELS IN ADULT-ONSET MOYAMOYA DISEASE WITH HEMORRHAGIC PRESENTATION

[1]Y Cho, [2]H Kang, [1]M Han. *[1]Radiology, Seoul National University Hospital, Seoul, Republic of Korea; [2]Neurosurgery, Seoul National University Hospital, Seoul, Republic of Korea*

10.1136/neurintsurg-2016-012589.36

Purpose Strategies for treating intracranial aneurysms of collateral vessels in adult-onset moyamoya disease (MMD) remain unclear, because overall case numbers are limited and data on long-term outcomes are lacking. The aim of this study was to assess clinical and anatomic outcomes of such aneurysms in adult MMD sufferers who present with hemorrhage.

Methods Of the 77 adult patients consecutively enrolled between January, 2003 and December, 2014 in the MMD registry at a single institution, those presenting with hemorrhage and followed for >12 months were studied. Aneurysms involving collateral vessels at sites of hemorrhage were considered culprit lesions.

Results Aneurysms of collateral vessels in 19 patients (19/77, 24.7%) were confirmed as ruptured by conventional angiography. In five of these patients, obliterative endovascular embolization was successfully performed. The other 14 patients were managed conservatively due to lesion inaccessibility. Follow-up imaging studies (13 available) confirmed later disappearance of

aneurysms in 12 patients (92.3%), although re-bleeding occurred in eight (42.1%) during follow-up (mean, 67.4 ± 38.9 months). The re-bleeding involved contralateral hemispheres in 6 patients (75.0%), and all re-bleeding events occurred >6 months after initial hemorrhages. In the other 58 subjects without aneurysm, 13 (22.4%) also suffered re-bleeding (mean follow-up, 71.9 ± 46.3 months).

Conclusion Although endovascular interventions are appropriate for ruptured aneurysms of collateral arteries in MMD, conservative treatment can be a viable alternative for technically inaccessible lesions. However, the re-bleeding rate in hemorrhagic MMD was higher in the presence of the aneurysms.

Disclosures Y. Cho: None. **H. Kang:** None. **M. Han:** None.

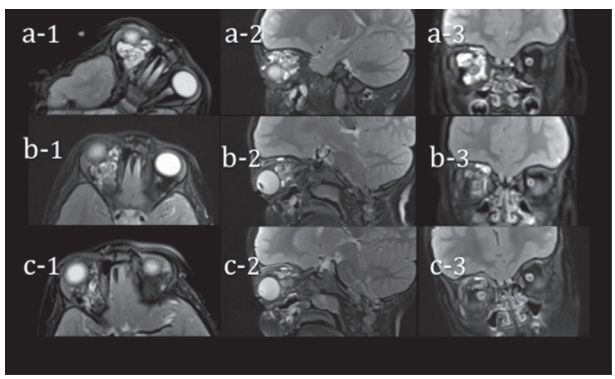
O-037 MRI-GUIDED SCLEROTHERAPY FOR INTRAORBITAL VASCULAR MALFORMATIONS: AN UPDATED EXPERIENCE

[1]**A Nicholson**, [2]T Powell, [3]J Saunders, [3]B Hayek, [4]T Wojno, [2]S Nour. *[1]Neurointerventional Radiology, UCSF, San Francisco, CA; [2]Radiology and Imaging Sciences, Emory University, Atlanta, GA; [3]Ophthalmology, Emory University, Atlanta, GA; [4]Ophthalmology, Emory, Atlanta, GA*

10.1136/neurintsurg-2016-012589.37

Introduction/purpose Despite benign histology, many congenital intra-orbital lesions have an aggressive prognosis owing to the confined orbital space and the intimate optic nerve association – resulting in pain, disfigurement, and vision loss. Complete surgical excision while preserving function may not be possible[1] The use of conventional fluoroscopically guided interventions is limited due to inability to visualize soft tissue anatomy. We have previously presented our work evaluating the feasibility of applying interventional MRI technology to access and treat these challenging intraorbital lesions, and now present an update with new patients and multi-year follow up.

Materials and methods Ten MRI-guided sclerotherapy procedures were performed on 4 patients (4M, 0F, age = 3–30y) presenting with cystic congenital intraorbital lesions. Patients presented with proptosis (n = 3), visual impairment (n = 2), diplopia (n = 1), ecchymosis (n = 2), and/or pain (n = 1). All procedures were exclusively performed within an interventional MRI suite with an in-room monitor used for real-time needle guidance, injection monitoring and bedside scanner operation. A 22 g MR-compatible needle was inserted into the targeted lesions under "MR-fluoroscopy" using triorthogonal image plane guidance[2] to interactively monitor the needle on continuously updated sets of true-FISP images (TR/TE, 4.35/2.18; FA, 60°; NSA, 3; TA, 3.11 s/slice). 0.6% gadolinium was mixed with 5% Ethanolamine Oleate (Ethamolin®) (0.15 ml:1.0 ml vol.) and injected under real-time monitoring using a triorthogonal FLASH sequence (TR/TE,2484/5.4). Follow up on the earliest patients is available for three years.



Abstract O-037 Figure 1 3-year-old male with a complex right-sided rectrobulbar slow flow vascular malformation encasing the optic nerve. The patients presented with proptosis, ecchymosis, squint, and visual impairment. He was subjected to 2 prior unsuccessful surgical interventions (a:1-3) are axial, sagittal, and coronal T2-Wis demonstrating the extent of malformation prior to MRI-guided sclerotherapy. (b:1-3) are the corresponding scans obtained 6 weeks after the first sclerotherapy session. (c:1-3) are the same scans obtained 12 weeks after the first, and second session of sclerotherapy. There has been significant shrinkage of the overall dimensions of the malformation and reduction of proptosis

Results Intra-orbital needle insertion and subsequent repositioning were sucesfully performed in all cases. The flexibility of triorthogonal guidance was most helpful in accessing the intraconal retrobulbar space. Active monitoring of sclerosing agent was persistently achieved on 3 planes. Targeted lesions ranged between 1.5 and 4 cm. Three lesions encircled/abutted the optic nerve. Between 1–5.5 mls of sclerosing material were injected per procedure. The smallest lesion was completely filled with sclerosant during each of 2 treatment sessions, with 3 partially filled to avoid excessive intraorbital pressure. Local edema and bruising were a standard finding for 1–2 weeks afterwards. Complete imaging resolution of one lymphatic malformation occurred. The 3 other lesions significantly shrank, without delayed complications.

Conclusion This report demonstrates long term success in using MRI technology to treat congenital intraorbital lesions, with no long term or delayed complications to date. This offers a new avenue for those patients who are typically deprived of surgical and other conventional interventional options.

REFERENCES

1 Chung EM, *et al*. *Radiographics* 2007;(**27**):1777–799.
2 Derakhshan JJ, *et al*. Proc ISMRM **15**:487(2007).

Disclosures A. Nicholson: None. **T. Powell:** None. **J. Saunders:** None. **B. Hayek:** None. **T. Wojno:** None. **S. Nour:** None.

O-038 DIFFERENTIAL INTER-STRAIN SUSCEPTIBILITY TO VERTEBROBASILAR DOLICHOECTASIA IN A MOUSE MODEL

Y Zhu, H Xing, D Dai, D Kallmes, **R Kadirvel**. *Mayo Clinic, Rochester, MN*

10.1136/neurintsurg-2016-012589.38

Purpose To investigate the differential susceptibility to elastase-induced vertebrobasilar dolichoectasia (VBD) induction in two different mouse strains.

Materials and methods 25 milliunit elastase was injected into the cisterna magna in C57BL/6 J (n = 48) and 129/SvEv (SV129) (n = 48) mice by injection of. At 3, 7, 14 and 28 days following elastase injection, MicroFil® polymer perfusion was performed. The arterial tortuosity index (TI) and the percentage increase in the diameter were calculated for basilar artery (BA). Arterial samples were processed for conventional histology, immunostaining and matrix metalloprotease (MMP) expression using gel zymography. A ≥50% increase in diameter and TI ≥ 10 of BA were used to indicate success in achieving VBD. Robust ANOVA using the Huber M-estimator was used to compare the effects of strain and time on % BA