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.

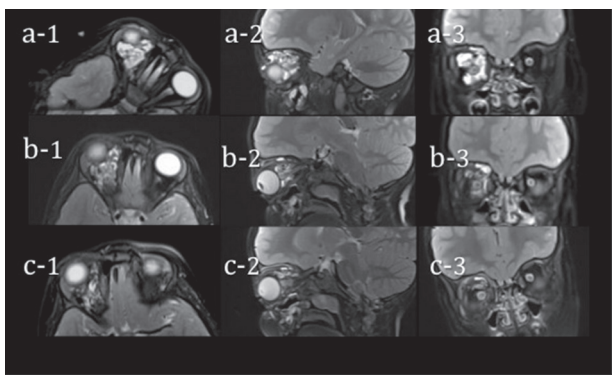
O-037 MRI-GUIDED SCLEROTHERAPY FOR INTRAORBITAL VASCULAR MALFORMATIONS: AN UPDATED EXPERIENCE

[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.

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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