Figure: A) ADC based stroke evolution, split into two groups, fast evolvers, and slow evolvers. B) TTP based classification of canines, predicting stroke evolution.

Abstract O-027 Figure 1 A) ADC based stroke evolution, split into two groups, fast evolvers, and slow evolvers. B) TTP based classification of canines, predicting stroke evolution

understanding of new therapeutics. Here we have shown that by analyzing the degree of delay from the TTP map, the rate of evolution of the stroke can be predicted.

REFERENCES

1. Acute Stroke. *Stroke* 2017;**48**:1588–1593.
2. *Stroke*. 2011;**42**:3265–3270.

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O-028 POST-SURGICAL PROPHYLACTIC EMBOLIZATION OF CHRONIC SUB-DURAL HEMATOMAS IN PATIENTS WITH HIGH RECURRENCE RISK: A MONOCENTRIC STUDY

¹E Shotar, ¹B Mathon, ¹S Lenck, ¹L Meyblum, ²V Degos, ¹K Premat, ¹N Sourour, ³A Boch, ³A Carpentier, ¹F Clarençon*. ¹Neuroradiology, Pitié-Salpêtrière Hospital, Paris, France; ²Neuro-Intensive Care Unit, Pitié-Salpêtrière Hospital, Paris, France; ³Neurosurgery, Pitié-Salpêtrière Hospital, Paris, France

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Background and purpose The gold standard treatment for chronic subdural hematomas (cSDHs) is the surgical evacuation through a burr hole. Recurrence after such surgical procedure may occur in 10 to 20% of the cases. Embolization through the middle meningeal artery (MMA) is a promising technique for the treatment of cSDHs. The purpose of our study was to evaluate the feasibility, safety and effectiveness, in terms of recurrence reduction, of post-surgical embolization of cSDH in patients with a high risk of recurrence.

Materials and methods Monocentric retrospective study performed on prospectively collected data at the Pitié-Salpêtrière Hospital. From March 2018 to February 2019, embolizations with calibrated microparticles through the MMA were performed in patients surgically treated for a cSDH with a high risk of recurrence, defined as follows: 1) previous recurrence of cSDH or 2) antiplatelet therapy or 3) full anticoagulation therapy or 4) coagulation disorder or 5) hepaticopathy or 6) chronic ethylism. In all patients, a pre-embolization supra-aortic trunks (SATs) CT-angiography was performed to rule

out a dumb-bell thrombus on the aortic arch or severe atheroma/tortuosity of the SATs.

Results Forty-four patients met the inclusion criteria during the inclusion period. Two patients were excluded (one in a prolonged comatose state and another with a chronic renal failure). Two patients refused the embolization procedure. A last patient was excluded due to major atheroma on the SATs. Finally, 39 patients with 43 cSDHs (4 patients had bilateral SDHs) underwent the embolization procedure. Thirty-seven embolization procedures (95%) were performed under local anesthesia. Among the 43 cSDHs, 5 (9%) could not be embolized due to catheterization failure (4 cases) or to the presence of a 'dangerous anastomosis' (1 case). No complication (either major or minor) was recorded. Only one recurrence (2.6%) requiring a surgical retreatment was recorded during the follow-up period.

Conclusion Post-surgical embolization through the MMA is a simple and safe procedure, which may reduce the recurrence risk of cSDHs. These preliminary results should be confirmed by randomized controlled trials.

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O-029 BRAIN TISSUE IRON QUANTIFICATION AT THE PERIPHERY OF THE HEMATOMA BY MRI IN PATIENTS WITH INTRACEREBRAL HEMORRHAGE: TRANSLATIONAL EVIDENCE IN FIRST 10 PATIENTS

¹N Chaudhary*, ²A Pandey, ¹J Griaudze, ¹J Gemmete, ²R Keep, ²G Xi. ¹Radiology, University of Michigan Health System, Ann Arbor, MI; ²Neurosurgery, University of Michigan Health System, Ann Arbor, MI

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Objective Intracerebral hemorrhage (ICH) has devastating consequences in the human population. No specific outcome modifying treatment or objective risk stratifying measure currently exists in ICH patients. The goal of our study is to

validate an MRI based algorithm to reliably quantify the iron levels in the periphery of the hematoma.

Methods Institutional IRB was obtained for the study. We secured NIH funding to undertake the study in September 2018. We recruited 10 patients based on inclusion and exclusion criteria established for the study. The study protocol was to obtain MRI at day 3, 14 and 30 following ICH. The MRI scans were performed without contrast. The sequences performed were T1, T2 and PADRE plus a multi-echo susceptibility weighted sequence. Relaxivity ($1/T2^* - R2^*$) maps were then created utilizing the multi-echo sequence in Matlab. Two consecutive volumes of interest (VOI) 1 & 2 rings were then manually drawn on the maps around the periphery of the hematoma, on all the axial slices demonstrating the hematoma, on all available date points in each individual patient. Identical contralateral brain VOI (Normal Control - NC) was also drawn at each corresponding MRI axial image slice. The average measurement values were then tabulated at pre-specified time points over a period of one month following the ICH. The $R2^*$ value was then extrapolated to an iron concentration (IC) measured from an iron phantom MRI with identical sequences.

Results 10 eligible patients with ICH and two controls were recruited to the study. The Mean $R2^*$ value Day 3: VOI 1; 53.59 (SD: 6.01) - IC 0.16 SD 0.02, VOI 2: 28.35 (SD: 5.17) - IC 0.08 SD 0.02, NC: 19.47 (SD: 2.85) - IC 0.05 SD 0.01. Day 14: VOI 1; 47.97 (SD: 5.43) - IC 0.14 SD 0.02, VOI 2: 27.19 (SD: 2.19) - IC 0.08 SD 0.01, NC: 18.94 (SD: 1.62) - IC 0.05 SD 0.01. Day 30: VOI 1; 49.14 (SD: 6.44) - IC 0.15 SD 0.02, VOI 2: 30.10 (SD: 3.41) - IC 0.09 SD 0.01, NC: 19.93 (SD: 2.82) - IC 0.05 SD 0.01.

Conclusion Our study, the first translational study of its kind, shows relatively reliable iron concentration measurements by MRI at the periphery of the hematoma over a period of 1 month following the ICH, showing good correlation with previous animal study data over a similar duration. Larger study is needed with extended 180 day follow up to further validate the measurement algorithm with a view to potentially becoming an MRI based risk stratification strategy in ICH patients. In addition, the algorithm may be utilized for monitoring iron chelate therapy in ICH.

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O-030

OPHTHALMIC ARTERY CHEMOTHERAPY IN RETINOBLASTOMA

T Shokuhfar, R Abdalla*, S Ansari, M Hurley, B Rahmani, A Shaibani. *Radiology, Northwestern University, Chicago, IL*

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Purpose To evaluate the safety and efficacy of intra-arterial chemotherapy (IAC) for the treatment of children with retinoblastoma.

Methods and materials Retrospective chart review of all pediatric patients with retinoblastoma treated with intra-arterial chemotherapy was performed. Common femoral artery was accessed with the placement of 4Fr sheath in all procedures using ultrasound guidance. Marathon microcatheter was used with .008 or .010 inch wire. Initial angiography of the internal carotid artery was performed to evaluate the territories supplied by the ophthalmic artery and to exclude variant anatomy.

Results Sixty-six ophthalmic arteries in 16 patients (M:F=7:9; mean age= 21 (± 9.2) months) were catheterized for IAC. The median time for each procedure was under 30 minutes. Three patients had unilateral and 13 had bilateral retinoblastoma. forty-four infusions were performed through the right and 22 through the left side ophthalmic artery. The median number of IAC cycles per patient was 4.1. The Technical success rate was 98% (65 out of 66 procedures) excluding one patient due to the complex anatomy. Hypersensitivity reaction to Melphalan was seen in 2 patients (one requiring adrenaline) during the catheterization procedure. One child eventually ended in enucleation after 4 cycles of IAC.

Conclusions Intra-arterial chemotherapy is an acceptable treatment option for retinoblastoma with a considerable high success rate and low rate of complications; however, attention must be paid to the technical nuances of and indications for its use in order to avoid potential complications.

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O-031

ROLE OF RESISTIVITY INDEX ANALYSIS IN THE PREDICTION OF HEMODYNAMICALLY SIGNIFICANT VENOUS SINUS STENOSIS IN PATIENTS WITH IDIOPATHIC INTRACRANIAL HYPERTENSION

¹M Mohammaden*, ²M Rizwan Husain, ¹D Brunozi, ¹G Atwal, ¹F Charbel, ¹A Alaraj. ¹Neurosurgery, University of Illinois at Chicago, Chicago, IL; ²Neurology, University of Illinois at Chicago, Chicago, IL

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Background The resistivity index (RI) in cerebral venous sinus stenosis (VSS) has not been studied in patients with idiopathic intracranial hypertension (IIH).

Objective To evaluate the role of resistivity index (RI) measured by quantitative MRV (QMRV) as a non-invasive tool in the diagnosis of venous hypertension associated with VSS in idiopathic intracranial hypertension (IIH).

Abstract O-031 Table 1 Demographic data and RI between patient and control

	Patients n=13	Control n=13	P value
Patients' demographics			
Age (years)	46.6 $\pm$ 15.1	39.9 $\pm$ 19.4	0.34
Gender (female) n (%)	10 (76.9%)	9 (69.2%)	0.13
Body mass index (BMI)	28.9 $\pm$ 8.5	25.9 $\pm$ 7.5	0.35
Lumbar puncture opening pressure (mmHg)	37.2 $\pm$ 6.6	—	—
Unilateral VSS n (%)	11 (84.6%)	—	—
Resistivity index (RI)			
Superior sagittal sinus	0.21 $\pm$ 0.12 (95% CI 0.14 - 0.28)	0.11 $\pm$ 0.06 (95% CI 0.08 - 0.15)	0.01
Transverse sinus	0.22 $\pm$ 0.12 (95% CI 0.15 - 0.30)	0.13 $\pm$ 0.07 (95% CI 0.09 - 0.17)	0.03
Sigmoid sinus	0.15 $\pm$ 0.06 (95% CI 0.12 - 0.19)	0.11 $\pm$ 0.06 (95% CI 0.07 - 0.14)	0.07

All values are presented as (mean $\pm$ SD) unless indicated otherwise. Boldface type indicates statistical significance. VSS; venous sinus stenosis, CI; confidence interval