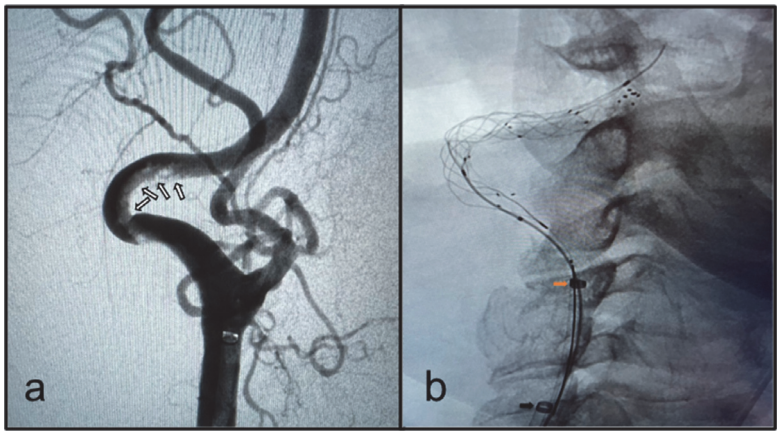

Abstract E-272 Figure 1 (A) AP DSA view of the right CCA and visualized CFFT (arrows). (B) AP native view of the inflated Walrus BGC (black), Zoom88 (orange), and deployment of the triple-SR 'bouquet' intercalated within the thrombus of the common carotid artery

a safe and curative technique for historically difficult-to-treat lesions.

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E-273 HEAD AND NECK ENDOVASCULAR REPAIR OF VASCULAR MALFORMATIONS

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Purpose To determine the efficacy of ethanol embolotherapy of extracranial head and neck vascular malformations of all types, particularly after failure of other endovascular and surgical treatments.

Materials and Methods One hundred and sixty-six patients (64 males, 102 females; mean age: 38 yrs) presented with extracranial arteriovenous malformations (AVMs) of the head and neck area. Over half of the patients had undergone previous failed therapies (Glue, Onyx, PVA, Coils). All patients underwent ethanol embolotherapy under general anesthesia. Forty-five patients had AVMs and 121 patients had venous malformations (VM).

Results Of 45 AVM patients, 26 patients are cured (mean follow-up 2 ½ years); of 121 venous malformation patients, 65 are at end-therapy (mean follow-up 4 ½ years). The remaining patients are not at end-therapy and are being treated for their residual malformations. In AVM follow-up, arteriography is the main imaging modality to determine cure or residual AVM as MR is less sensitive in the evaluation of residual AVM. In VM follow-up, MR is the main imaging tool, particularly with T- 2 fat suppression and/or STIR imaging. All patients demonstrated improvement post-therapy. Complications were 4.5%, to include bleeding (self-limited), partial 7th nerve palsy (with recovery), skin injury (not requiring skin grafts), infection, and pain.

Conclusions Ethanol has proven its consistent curative potential at long-term follow-up for high-flow AVMs and low-flow VM lesions at long-term follow-up as lesions in the periphery. Complication rates remain low. The procedures are tolerated well by the patients and done on an out-patient basis. Prior surgery and embolization procedures can cause difficulty in lesion access, but does not obviate further ethanol endovascular treatment.

Disclosures W. Yakes: None.

E-274 ENDOVASCULAR MANAGEMENT OF HIGH-GRADE CEREBRAL ARTERIOVENOUS MALFORMATION

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Introduction High grade cerebral AVM (Spetzler grade 4 and 5) have a very complex structure and architecture. Accordingly, their management is very challenging. Their natural history also is known to be poor. We present our experience of patients with high-grade cerebral AVM and their management with endovascular methods.

Methods Sixty-seven patients with high-grade cerebral AVM with one embolization session between 2010 and 2021 were included in this study. The baseline and treatment outcomes were collected and reported.

Results The mean age of patients was 29.2 years ± 15.8 (SD) with predominant of men (63.6%). The most common presentations were hemorrhage (57.6%), seizure (18.2%), and focal neurological deficit (13.6%). At patient admission, median range of modified Rankin scale was 1 (range of 0 to 4). The majority of AVMs were located in cortical and subcortical area (47%), 53 were grade 4 of Spetzler- Martin, and 14 grade 5. Mean nidus diameter was 47.8 mm ± 14.2 (SD). Median number of embolization sessions was 3 with range of 1-13. Eighteen AVMs (26.9%) were completely excluded by embolization (33% in grade 4 and 7% in grade 5). Significant complications occurred in 24 (36%) patients including hemorrhage (66.7%) and ischemia (33.3%). Fifty patients (75.8%) had good outcome (mRs 0-2) and one patient died following embolization.

Conclusion Despite relative high rate of complications, the majority of our patients had good outcome that is better than natural history of the high grade cerebral AVMs. Complete exclusion of high-grade cerebral AVM could be achieved by embolization in limited patients. Further studies are needed to define the optimal management for these complex AVMs.

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E-275 ENDOVASCULAR THERAPY FOR ACUTE STROKE WITH A LARGE ISCHEMIC REGION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction Endovascular treatment (EVT) replaced medical management (MM) alone in patients with small- to medium-sized infarct core secondary to occlusion of large vessels in the anterior circulation; however, its efficacy and safety for large core infarction is uncertain. In this meta-analysis, we aimed to investigate the efficacy and safety of EVT for patients with large core infarct.

Materials and Methods Three online databases of Web of Science, PubMed and Scopus were systematically searched. Original studies which evaluated participants with large core infarction who underwent EVT were included. R statistical software was used for statistical analyses. Effect sizes were presented with odds ratios (ORs) with their 95% confidence intervals (CIs). The effect sizes were pooled using random effects modeling.

Results Including 47 studies and 15173 patients, this meta-analysis showed that compared with MM, EVT was associated with decreased odds of mortality (0.67, 95% CI: 0.51-0.87) and increased odds of favorable outcomes, including a modified Rankin Scale of 0-3(2.36, 95% CI: 1.69 -3.291) and of 0-2 (3.54, 95% CI: 1.96-6.4) in 90 days and remarkable improvement in National Institutes of Health Stroke Scale within 48 hours after the procedure (3.6, 95% CI:1.32-9.79). Besides, there was a higher chance of intracranial hemorrhage development (1.88, 95% CI: 1.32-2.68) but not symptomatic hemorrhages (1.34, 95% CI: 0.78-2.31) in those who underwent EVT.

Conclusion Our study suggests that EVT might be an effective and relatively safe treatment option for the treatment of patients with large core infarcts, although more large-scale trials are needed to consolidate the results and to make inclusion criteria and the patient selection process clearer.

Disclosures A. Mowla: 2; C; Speakers Bureau/Consultant to Cerenovus, Stryker, Wallaby Medical, RapidAI , BALT USA, LLC.. 3; C; Speakers Bureau/Consultant to Cerenovus, Stryker, Wallaby Medical, RapidAI , BALT USA,LLC.. **S. Abdollahifard:** None. **E. Taherifard:** None. **A. Sadeghi:** None. **P. Rakhshandeh Hassan Kiadeh:** None. **O. Yousefi:** None.

SNIS 20th annual meeting late-breaking oral abstracts

LB-001 CHRONIC SUBDURAL HEMATOMA TREATMENT WITH EMBOLIZATION VERSUS SURGERY STUDY (CHESS)

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Background Chronic subdural hematoma (cSDH) is one of the most common neurosurgical diseases with a significant financial burden. Current management includes observation for mild or asymptomatic patients and surgical drainage for moderate and severe patients. However, surgical drainage is associated with a 15% reoperation rate and a mortality of up to 10%. Middle meningeal artery embolization (MMAE) is a promising minimally invasive alternative with an estimated surgical recurrence rate of 6.8% and 4.6% for standalone MMAE and combined MMAE and surgery respectively. However, randomized data is lacking for this emerging therapy.

Methods CHESS is a NIH-funded, prospective, multi-center, randomized, open label clinical trial. Patients with a moderately symptomatic cSDH (***de novo or recurrent***), defined as 4/5 weakness or better, gait instability, or mild aphasia, will be randomized in a 1:1 ratio to ***standalone MMAE*** with ***particles (PVA or embospheres)*** or surgical drainage. The composite primary outcome is the proportion of patients that require ***rescue surgery or die*** within 180 days. The primary hypothesis is that the proportion of that require surgery or die within 180 days after randomization is lower by 13% or more for the MMAE treated group compared to surgical drainage. For an effect size of 13%, assuming that the proportion of subjects that will require surgery or die is 25% in the surgical drainage group, a type I error probability of 0.05, a type II error probability of 0.15, and a dropout/crossover rate of 10%, the sample size of 394 patients was estimated. One interim analysis for overwhelming efficacy and futility will be performed assuming a group sequential design of O'Brien and Fleming boundary. Safety outcomes include the proportion of subjects with ischemic strokes, serious/life threatening adverse events, worsening neurological status or development of new disabling neurological symptoms, seizures, and cranioneuropathy (blindness and facial paralysis) within 180 days of randomization. Exploratory outcomes include volumetric reduction in hematoma size, change in Quality of Life, cognition, headache, and mRS at 180 days.

Discussion CHESS is designed to be the first US randomized controlled trial to provide evidence on the safety and efficacy of standalone MMAE vs surgical drainage. Innovative features of this design include the use of particles as the embolic agent and the inclusion of recurrent, in addition to de novo, cSDHs.

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