

+BGC). Emboli smaller than 1000 μm was characterized using the Coulter Principle. The primary endpoints were the size and quantity of the clot fragments generated during the procedure and the secondary endpoints were the flow recanalization rate and time to recanalization.

Results Formation of large emboli greater than 1000 μm in size occurred in 2 out of 10 cases in the ERIC[®]+BGC group, versus 7, 6 and 5 of 10 experiments with the ERIC[®]+SOFIA, Solitaire+SOFIA, ERIC[®]+SOFIA+BGC groups, respectively. The ERIC[®]+BGC group marginally reduced the number of emboli having a diameter $>200 \mu\text{m}$ ($p = 0.064$), with a total of 5 particles, as compared to the ERIC[®]+Sofia, Solitaire+Sofia, and ERIC[®]+Sofia+BGC groups that produced 20, 17 and 16 fragments $>200 \mu\text{m}$, respectively. On average, in the size range between 100–200 μm and 50–100 μm , ERIC[®]+Sofia showed a trend to reduce clot fragments as compared with the other 3 treatment strategies; however, these results were not statistically significant ($p > 0.05$). There were no significant differences in particle number between any of the groups for particles with size $<50 \mu\text{m}$. A complete flow restoration after a single pass was observed in all cases except for two experiments in the Solitaire + Sofia group, which required two passes to achieve full recanalization. Without waiting for 4 minutes prior to clot removal, thrombectomy with the ERIC[®] allows shorter time to recanalization as compared to the Solitaire.

Conclusion Based on this preliminary study, it is our conclusion that the techniques of ERIC[®]+BGC, ERIC[®]+Sofia, Solitaire+Sofia, and ERIC[®]+SOFIA+BGC are all similar with regard to clot fragmentation. Combining all particulates in the most dangerous range ($>200 \mu\text{m}$), there was a marginal reduction in the number of distal emboli with the use of ERIC[®] and BGC ($p = 0.064$).

Disclosures J. Chueh: None. M. Marosfoi: None. E. Langan: None. A. Puri: 1; C; Medtronic Neurovascular, Stryker Neurovascular. 4; C; InNeuroCo. M. Gounis: 1; C; National Institutes of Health, Codman Neurovascular, Stryker Neurovascular, Microvention, Medtronic Neurovascular, Philips Healthcare, InNeuroCo, Neuronal Protection Systems, the Wyss Institute, Silk Road. 2; C; Codman Neurovascular, Stryker Neurovascular. 4; C; InNeuroCo.

E-048 FACTORS ASSOCIATED WITH EARLY TRACHEOSTOMY AND PERCUTANEOUS GASTROSTOMY AND THEIR EFFECTS ON HOSPITALIZATION IN HEMORRHAGIC STROKE PATIENTS

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10.1136/neurintsurg-2016-012589.120

Objective Tracheotomy and percutaneous endoscopic gastrostomy (PEG) are sometimes performed in critically ill hemorrhagic stroke patients in order to avoid complications associated with prolonged intubation and nasogastric feeding. However, there is a paucity of information regarding the optimal timing of these procedures. In this study, we aimed to evaluate the role of early tracheotomy and PEG in hemorrhagic stroke patients.

Methods A series of patients treated at University of Kentucky for hemorrhagic stroke between June 1, 2011 and June 1, 2015 was retrospectively reviewed. Data regarding diagnosis, demographics, comorbidities, treatment, hospital course, and performance of tracheotomy and/or PEG were collected and then analyzed using logistic regression and multiple linear regression.

Results Of 366 hemorrhagic stroke patients, 75 underwent tracheotomy and 86 received PEG. Factors significantly associated with tracheotomy and PEG included patient age ($p < 0.01$), pneumonia present on admission ($p < 0.005$), and subtype of hemorrhagic stroke ($p < 0.05$). Tracheotomy and PEG were not significantly associated with patient survival or development of complications. Earlier PEG placement was correlated significantly with shorter overall hospital stay in survivors ($p < 0.001$), but neither tracheotomy nor PEG was correlated with ICU length of stay.

Conclusions Hemorrhagic stroke is a devastating neurovascular event that requires prompt intervention and vigilant management. Our study identified patient risk factors that may suggest candidacy for tracheotomy and PEG. Additionally, we found that timing of PEG may shape a patient's hospital course. Complication rates related to tracheostomy and PEG in this population were minimal. In conclusion, this retrospective data set supports some benefit to early PEG placement in this population, and justifies the need for further prospective study.

Disclosures M. McCann: None. J. Fraser: None.

E-049 EAR ARTERIOVENOUS MALFORMATION MANAGEMENT

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10.1136/neurintsurg-2016-012589.121

Purpose To determine the efficacy of Ethanol Endovascular Repair of Ear Arteriovenous Malformation (AVMs).

Materials and methods Ten patients (7 female, 3 males; age range 6–39 years; mean age: 22 years) with ear AVMs presented for therapy. Two patients had failed prior embolizations (PVA/coils/nBCA/steroids) and 2 patients had other therapies (laser/excisions/grafting). All presented with a grossly enlarged painful ear, and 5 patients had intermittent bleeding. All patients underwent transcatheter and direct puncture ethanol treatments (86 procedures).

Results All 10 patients were cured of their AVM at long-term follow-up (mean follow-up: 52 months). One patient had transient partial VII nerve palsy. Two patients had minor blisters and ear injuries that healed on the outer tragus.

Conclusions Ethanol endovascular repair of Ear AVMs can achieve cures in this vexing lesion that previously was treated with resection of the ear and with high recurrence rates. This series documents long-term cures of AVMs of the ear and scalp that were not treatable by endovascular approaches as previously documented in the world's literature. Permanent treatment of the auricular AVMs is documented and no recurrence occurred in any patient. Only one article is published (group from Shanghai, China) emulating this technique, that I taught them.

Disclosures W. Yakes: None.