available. Our local results are promising but larger series with long-term follow-up are required to determine its superiority.

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O-016

SURPASS EMBOLIZATION OF INTRACRANIAL ANEURYSMS AT TWO HIGH VOLUME COMPREHENSIVE STROKE CENTERS: UNEXPECTEDLY HIGH RATE OF NEUROLOGIC COMPLICATIONS

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Introduction/Purpose The Surpass flow-diverter (FD) has been offered as a new alternative to preexisting Pipeline FD with a comparable safety profile.¹ Prior publications have listed neurologic morbidity and mortality complication rates as 6% and 2.7% for the Surpass FD & 8.4% & 3.8% for the Pipeline FD respectively.^{1,2,3} Anecdotal national experiences with the Surpass FD have been mixed, and there is a scarcity of data on real world complications of Surpass FD. A systematic review of cases performed at a high volume comprehensive stroke center involving the Surpass device was conducted.

Materials and Methods A review of all aneurysms treated with the Surpass FD at two high volume aneurysm treatment centers was conducted. Procedures involving the Surpass FD were conducted almost exclusively by experienced neuro-interventionalists with a combined experience of greater than 400 Pipeline FDs at two large academic comprehensive stroke centers.

Results All consecutive cases done between 1/10/2019 to 1/2/2020 were included. There were 55 patients with 68 treated aneurysms. Procedure related complications occurred in 12 patients (21.8% of cases) with permanent neurologic morbidity present in 11 patients (20.0%). Mortality attributable to complications from Surpass stenting occurred in 2 patients (3.6%). Ophthalmologic thromboembolic complications consisting of visual field compromise, ophthalmic artery thrombosis, or retinal hemorrhage occurred in 4 patients (7.3%). Stent thrombosis occurred in 2 cases (3.6%). Technical difficulty in device deployment resulted in 3 complications (5.5%): confirmed distal MCA guidewire perforation; suspected distal MCA guidewire perforation as a cause of immediate post-procedural subarachnoid hemorrhage; and proximal internal carotid artery dissection resulting in ischemic stroke. In one case the Surpass device could not initially be deployed but procedure was repeated later with a proctor present. Seizures developed following the procedure in 5 patients, with focus identified on ipsilateral side in 3 cases & no definitive focus identified in 1 case (7.3% combined attributable cases).

Conclusion Complication rates in addition to technical issues in deployment with the Surpass FD were higher than anticipated, even when performed by experienced neuro-interventionalists. The types of the complications included technical

difficulty in device deployment, vascular injury, thromboembolic events and unexplained ipsilateral seizures. Large scale future registry analysis should focus on national data regarding the safety profile of Surpass.

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O-017

REPEAT FLOW DIVERSION FOR PREVIOUSLY FAILED FLOW DIVERSION: MULTICENTER EXPERIENCE

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Background Aneurysmal persistence after flow-diversion (FD) occurs in 5–25% of aneurysms which might necessitate further treatment. A frequently used retreatment paradigm utilizes the deployment of another flow-diverting device (FDD) in a telescoping fashion within the existing device. There are no current data evaluating this strategy.

Methods A retrospective review of patients undergoing FD retreatment from 15 centers was performed, with inclusion criteria being repeat FD occurring for the same aneurysm at least 6 months after initial treatment, with minimum of 6 months of imaging follow-up after retreatment. Primary outcome was aneurysmal occlusion, and secondary outcomes were safety and complications. A multivariable logistic regression model was constructed to identify predictors of persistence/occlusion after retreatment. Comparative Kaplan-Meier curves were developed to assess the effect of early (6–12 months since initial treatment) vs late retreatment (>12 months since initial treatment) on the cumulative incidence of aneurysm occlusion over time.