blood flow away from the bleeding perforators. Future studies will determine the optimal device design (including mesh density and porosity) that would allow sufficient blood flow reduction in the covered perforating arteries, while avoiding downstream brain ischemia.

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E-054 PULSERIDER-ASSISTED TREATMENT OF INTRACRANIAL ANEURYSMS IN THE STERLING REGISTRY

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Introduction PulseRider (Cerenovus, Irvine, CA) is an adjunctive neck bridging device designed to aid in coiling of wide neck bifurcation intracranial aneurysms. We present outcomes of PulseRider assisted coil embolization of brain aneurysms in routine clinical practice included in the STERLING registry.

Materials and Methods STERLING (NCT03642639) is a prospective, global registry of endovascular treatment of intracranial aneurysms with Galaxy and MicrusFrame coils (Cerenovus, Irvine, CA). PulseRider cases from STERLING were included in this interim analysis. Primary outcome measures were core-lab assessed modified Raymond-Roy (mRR) occlusion at final procedural angiogram, and where available, at 6 months (+/-3 months) or 1 year (COVID allowed winnow: -3 months/+1.5 years). Safety outcomes were procedure- and device-related adverse events.

Results Seventeen subjects (mean age 64.4 ± 8.69 years, 12 female) were treated with the PulseRider device. All cases were unruptured and two were retreatments of previously coiled aneurysms. All aneurysms had saccular morphology, 14/15 (93.3%) were wide neck and 13/15 (86.7%) were at a bifurcation. Target aneurysm locations included basilar artery (6/15, 40.0%), MCA bifurcation (4/15, 26.7%), ACA (3/15, 20%), ICA terminus (1/15, 6.7%), and M2 (distal to bifurcation, 1/15, 6.7%), with a mean parent vessel diameter of 2.65 ± 0.440mm. PulseRider was successfully implanted with the ability to retain the coil mass in all cases. Mean packing density was 29.7 ± 11.32%. Adequate occlusion (mRR I or II) was achieved in 86.7% (13/15) cases immediately post procedure, 100% (3/3) at 6 months, and 75% (3/4) at 1 year. There were no intraoperative ruptures, no symptomatic thromboembolic events, and no device related SAEs through the maximum follow up. 87.5% (7/8) subjects had mRS 0–2 at 1 year. There were no aneurysm retreatments.

Conclusion In this interim analysis of the ongoing STERLING registry, treatment of intracranial aneurysms with the PulseRider device in conjunction with embolization using Galaxy and MicrusFrame coils showed excellent safety outcomes and high rates of adequate occlusion and good clinical outcome.

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E-055 INTERNAL CAROTID ARTERY RECONSTRUCTION WITH FLOW DIVERTING STENTS IN THE TREATMENT OF ACUTE ISCHEMIC STROKE: TECHNICAL CONSIDERATIONS AND MEDICAL MANAGEMENT

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Introduction Extracranial internal carotid artery (ICA) dissections can cause stroke in a relatively young patient population. Acute endovascular reconstruction might be needed for cases with concomitant large vessel occlusion (LVO) or with a symptomatic hemispheric perfusion deficit. Tortuous cervical ICAs, often associated with dissection, might limit applicability of stiff carotid stents and require utilization of more flexible flow diverting stents (FDS). We present clinical results and technical considerations for the use of FDS in a series of patients treated for symptomatic ICA dissection.

Materials and Methods We retrospectively reviewed all cases of symptomatic ICA dissections that presented at our hospital in 24 months and reviewed technical aspects and clinical outcomes of those that underwent acute reconstruction by FDS.

Results Six males (range: 37–66 years) underwent acute ICA reconstruction with FDS for treatment of a symptomatic dissection. In 3 (50%) cases the dissected segment had a complete loop. Five (80%) patients had concomitant intracranial LVO, 1 had a large area of hypoperfusion on CT imaging.
ICA luminal restoration was achieved in all cases. An average of 2 FDS were deployed telescopically to cover the dissection. Balloon angioplasty was performed in two cases to improve opening of the implant. Adjunctive carotid stents were deployed in all cases to secure the proximal end of the FDS. LVOs were addressed after ICA reconstructions by combined technique and ingestion of the stentriever in the aspiration catheter, that was advanced within the construct and positioned distally to it without issue in all cases (TICI scores: 2b-3). All patients received intra-operative epitifibatide, bridged subsequently to dual antiplatelet therapy (aspirin + ticagrelor).

Acute, non-occlusive in-stent thrombus was noted in 2 cases, while wire access was lost in one case, significantly increasing operative time. Hemorrhagic transformation of an acute infarct was seen in 2 (33%) patients. A good outcome (mRS 0–2 at 90 days) was achieved in 5 (83%) patients, while one died of malignant brain edema shortly after intervention. Imaging follow-up was available for 4/5 surviving patients (80%, median: 18 months) and showed complete stent patency.

Conclusions FDS appears to be a safe and effective tool for reconstruction of a symptomatic dissection in tortuous cervical ICAs. Their flexibility allows conformation to complex anatomies and they can be traversed multiple times by aspiration catheters/stentriever. We found excellent patency at follow-up and the high rates of complete long-term occlusion and good clinical outcomes among patients treated with PED-Shield.

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