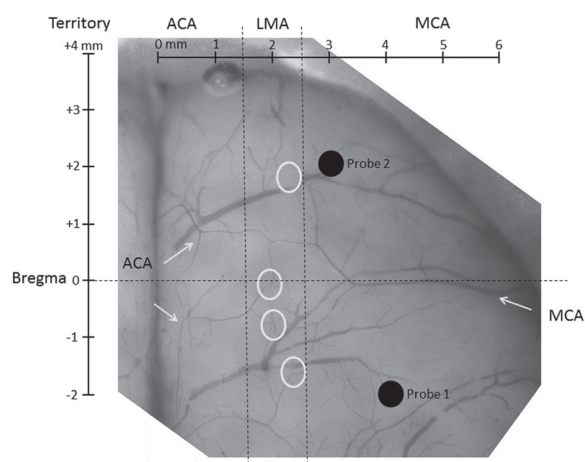


mechanically ventilated during MCAO to maintain blood gases within physiologic ranges and body temperature at 37°C. Chloral hydrate anesthesia was used. Data are presented as mean \pm SEM.

Results The overall drop in CBF during ischemia was similar between Wistar and SHR ($-73 \pm 1\%$ and $-78 \pm 4\%$; $p > 0.05$). The average number collateral openings during 2 hours of ischemia was decreased in SHR compared to Wistar (0.8 ± 0.6 vs. 2.2 ± 0.3 ; $p = 0.06$), as was the total duration of collateral opening (4 ± 4 vs. 26 ± 8 min; $p < 0.05$). After 2 hours of reperfusion, rCBF was decreased in the MCA territory in both SHR and Wistar compared to baseline ($-43 \pm 6\%$ and $-24 \pm 4\%$; $p < 0.05$) demonstrating incomplete microcirculatory perfusion; however, rCBF in the collateral perfusion territory was decreased in SHR and increased in Wistar (although variable) compared to baseline ($-26 \pm 7\%$ vs. $70 \pm 63\%$).

Conclusions These results demonstrate that collateral flow during ischemia, and reperfusion, was impaired in hypertension likely due to vasoconstriction of LMAs. Understanding the function of pial collaterals under conditions such as hypertension, that is associated with little penumbral tissue, may provide targeted therapies to prevent collateral failure and extend the time window for treatment in these patients.

Dual laser Doppler probe placement for core and collateral flow measurement on a rat brain



Abstract O-013 Figure 1

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O-014 VISION OUTCOMES FOR PARACLINOID ANEURYSMS TREATED WITH FLOW DIVERTERS

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Introduction Aneurysms of the paraclinoid region of the internal carotid artery (ICA) and the interventions used to treat them often result in visual impairment. Because of the prox-

Abstract O-014 Table 1

Treatment	Improved	Unchanged	Deteriorated	New deficit
Coil (n = 534)	41.3%	38.0%	14.1%	9.2%
Clip (n = 638)	53.6%	19.6%	23.2%	2.8%
Flow Diversion (n = 275)	72.6%	25.5%	2.0%	4.0%
Flow Diversion at BWH (n = 23)	80%	20%	0%	7.7%

imity of these aneurysms to the optic nerve and the ophthalmic artery, between 16% and 53% of patients present with visual deficits. While flow diversion is increasingly used throughout endovascular neurosurgery, few studies have reported the visual outcomes of treating paraclinoid aneurysms with this technique or compared it to coiling or clipping.

Hypothesis In order to satisfy demand for data on the visual outcomes for this new endovascular treatment modality and inform the contemporary management of paraclinoid aneurysms, we performed a retrospective analysis of patients with paraclinoid aneurysms treated at our site with a Pipeline embolization device (PED).

Methods We compiled visual outcome data for 20 patients presenting with 26 paraclinoid aneurysms and treated at our site with flow diversion, 10 of whom (totaling 13 aneurysms) presented with visual impairment. We then reviewed vision outcomes in these patients at discharge and at 6 months, noting improved, unchanged, deteriorated, or newly impaired vision. We also performed an extensive literature review to compile data (1447 cases from 21 sites) on vision outcomes for paraclinoid aneurysms treated with clips (534 cases), coils (638), or flow diverters (275).

Results Of twenty patients with 26 paraclinoid aneurysms treated at our site with a PED, ten patients (totaling 13 aneurysms with an average diameter of 7.1 mm) presented with preoperative visual impairment. Visual deficits were improved in 8 patients (80%) and unchanged in 2 (20%) following treatment. No patients experienced sustained worsening of their existing visual impairment, however one patient acquired postoperative iatrogenic vision impairment (5%). A literature review of paraclinoid aneurysm treatment revealed visual improvement rates of approximately 41% for clipping, 54% for coiling, and 73% for flow diversion, visual deterioration rates of approximately 14%, 23%, and 2%, and newly impaired vision rates of 9%, 3%, and 4%.

Conclusion Compared to clipping and coiling, flow diversion demonstrates a higher rate of visual improvement and a lower rate of visual decline in patients with visually symptomatic paraclinoid aneurysms, with comparable risk of iatrogenic vision impairment. We report strong visual outcomes in patients treated at our site for paraclinoid aneurysms with a PED, including small aneurysms. Our results suggest that this new treatment modality yields improved vision outcomes in patients with paraclinoid aneurysms compared to clipping and coiling.

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