

unruptured IAs (all $p < 0.001$). Ruptured IAs demonstrated significant associations with a history of all diseases of the digestive system (ICD-10: K00-K95), dysphagia, diarrhea, and constipation when contrasted with matched unruptured IA cases. Conversely, unruptured IAs exhibited significant associations with a history of gastroesophageal reflux disease (GERD), functional dyspepsia, and irritable bowel syndrome without diarrhea. In the cohort study, dysphagia, diarrhea, constipation, gastroparesis, and fecal incontinence displayed significant associations with both ruptured and unruptured IAs ($OR > 1$; $p < 0.05$). GERD, functional dyspepsia, and irritable bowel syndrome (IBS) without diarrhea were only associated with unruptured IAs.

Conclusion History of dysphagia, diarrhea, and constipation are associated with both the formation and rupture of IAs, while GERD, functional dyspepsia, and IBS without diarrhea are associated with IA formation only. Further studies are warranted to elucidate these associations and explore the intricate interplay among GI syndromes, the gut microbiome, and IA pathogenesis.

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O-011 ENDOVASCULAR FLOW DIVERTER STENTS FOR ACUTE IATROGENIC CEREBROVASCULAR INJURIES

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Introduction and Objective Intraoperative iatrogenic cerebrovascular injury can cause intracranial hemorrhage and pseudoaneurysm formation, putting patients at high risk for postoperative bleeding or vessel rupture. As no established protocol for the treatment of these acute vessel injuries exists, we sought to describe our institution's experience treating patients who suffered iatrogenic neurosurgical cerebrovascular injuries.

Methods Patient electronic medical records were retrospectively reviewed. We reviewed the type of injury, timing of diagnosis, and endovascular management, including antiplatelet regimens, as well as embolization results and clinical outcome.

Results A total of six patients were included in this study. Three patients suffered an injury to the internal carotid artery, one to the left anterior cerebral artery, one to the right posterior cerebral artery, and one to the basilar artery. Four of the six injuries occurred during attempted tumor resection, one during cerebrospinal fluid (CSF) leak repair, and one during attempted microsurgical clipping of an ophthalmic artery aneurysm. Three injuries occurred with transnasal endoscopic approach. All six vessel injuries resulted in pseudoaneurysm formation, one of which included vessel dissection, and five of the injuries were associated with vasospasm. Four of the pseudoaneurysms were immediately detected on postoperative angiography; two were initially negative on angiography and were not detected until postoperative days four and five. Five were treated with a Pipeline Embolization Device (PED) and one with a Silk Vista Baby. Two injuries were treated with two PEDs telescopically overlapped across the pseudoaneurysm. All devices deployed successfully. Patients were maintained postoperatively on a dual antiplatelet therapy of aspirin and clopidogrel or ticagrelor. No parent artery occlusion or stenosis was observed, and complete pseudoaneurysm

Abstract O-011 Table 1 Injury and diagnosis

Case No.	Vessel Injured	Injury Mechanism	Pseudoaneurysm Size at Time of Diagnosis (mm)	Days Post-Op to Injury Diagnosis	Initial Angiogram
1	Left ACA, A2 segment	TSRPT	1.2 × 1.36	0	Vessel injury
2	Right PCA, P2 segment	Clival chordoma resection, pterional approach	0.9 × 1.8	5	Negative
3	Left ICA	CSF leak repair, transnasal endoscopic approach	2 × 2.2 × 0.8	0	Vessel injury
4	Basilar artery	Clival and left cavernous sinus meningioma resection, endoscopic transsphenoidal approach	2.4 × 1.8 × 2.8	4	Negative
5	Right ICA	Subfrontal meningioma resection, bifrontal craniotomy	1 × 0.6	0	Vessel injury
6	Left ICA	Open clipping of an ophthalmic artery aneurysm	1.4 × 1.1	0	Vessel injury

Abbreviations: ACA, anterior cerebral artery; CSF, cerebrospinal fluid; ICA, internal carotid artery; PCA, posterior cerebral artery; SAH, subarachnoid hemorrhage; TSRPT, transsphenoidal approach for resection of pituitary tumor

Abstract O-011 Table 2 Treatment

Case No.	Stent Type, Number, and Size (mm)	No. of Stents Covering Injury	Stent Successful	Follow-Up Imaging	Delayed Complications
1	1 Silk Vista Baby: 2.5 × 10	1	Yes	MRA, no in stent thrombosis at 6 months	None
2	1 PED: 2.5 × 12	1	Yes	CTA, no in stent thrombosis at 1 month	None
3	2 PEDs: 3.5 × 12, 3.75 × 12	2	Yes	MRA, no in stent thrombosis at 16 months	Post-operative epistaxis in hospital
4	1 PED: 3 × 14	1	Yes	MRA, no in stent thrombosis at 13 months	TIA 9 days post-PED, resolved without deficits
5	3 PEDs: 3.25 × 10, 3.5 × 12, 4.75 × 12	2	Yes	Not available	None
6	2 PEDs: 3.75 × 14, 4 × 14	1	Yes	Not available	Not available

Abbreviations: CTA, computed tomography angiography; MRA, magnetic resonance angiography; PED, Pipeline Embolization Device; TIA, transient ischemic attack

occlusion was observed in four patients (except in two patients for whom follow-up imaging could not be obtained). **Conclusions** With proper antiplatelet regimens, flow diverter stents can be used safely to successfully treat these complex acute iatrogenic injuries. Early repeated angiogram is needed when immediate post-injury imaging does not discover the point of vessel injury.

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O-012 TREATMENT OF LARGE INTRACRANIAL ANEURYSMS USING THE WOVEN ENDOBRIDGE (WEB): A PROPENSITY SCORE-MATCHED ANALYSIS

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Background The Woven EndoBridge (WEB) device is primarily used for treating wide-neck intracranial bifurcation aneurysms under 10 mm. Limited data exists on its efficacy for large aneurysms (≥ 10 mm). We aim to assess angiographic and clinical outcomes of the WEB device in treating large versus small aneurysms.

Methods We conducted a retrospective review of the World Wide WEB Consortium database, from 2011 to 2022, across 30 academic institutions globally. Propensity score matching (PSM) was employed to compare 1331 small and 220 large aneurysms on baseline characteristics.

Results A total of 1551 patients were included. Both groups were similar in age, sex, smoking status, and rupture status. Small aneurysms had higher odds of complete occlusion (2.38 times) and lower odds of retreatment (5.31 times less) than large aneurysms. After PSM, 220 matched pairs showed significantly lower occlusion rates (77.1% vs 86.6%, $p = 0.0005$) and higher retreatment rates (22.2% vs 3.5%, $p < 0.001$) in the large aneurysm group.

Conclusion Large aneurysms treated with the WEB device showed lower occlusion and higher retreatment rates than small aneurysms, even after matching for baseline characteristics. These findings may inform treatment decisions and patient counseling.

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O-013 TREATMENT MODALITY FOR ANEURYSMAL SUBARACHNOID HEMORRHAGE AND THE RISK OF SHUNT-DEPENDENT HYDROCEPHALUS AND MORTALITY: A POPULATION-BASED STUDY

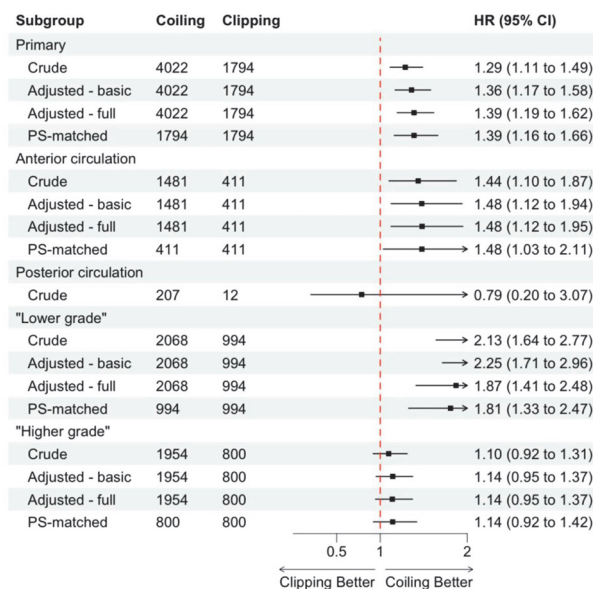
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Background Hydrocephalus is a significant contributor to morbidity following aneurysmal subarachnoid hemorrhage (aSAH). We aimed to investigate the association between primary treatment modality and the incidence of hydrocephalus requiring cerebrospinal fluid (CSF) diversion, utilizing a target trial approach for causal inference.

Methods This cohort study used U.S. administrative health claims data (Clinformatics Data Mart) and was conducted among aSAH patients undergoing primary treatment with either clipping or coiling from January 1, 2004, to February 28, 2023. The primary outcome was hydrocephalus requiring CSF diversion surgery while the secondary outcome was mortality. Multivariable regression and 1:1 propensity score (PS) matching were employed for confounder control. Crude and adjusted hazard ratios with 95% CIs were calculated.

Results A total of 5,816 patients (mean age, 59 years; 72% female) undergoing clipping ($n=1,794$) or coiling ($n=4,022$) were included in the primary cohort. The 1:1 PS-matched cohort had 1,794 participants per arm. Clipping demonstrated



Abstract O-013 Figure 1