aneurysms (<10 mm) that showed filling of the sac with contrast immediately after stent-assisted coiling and assessed factors implicated in subsequent the progressive occlusion.

Methods Between September 2012 and June 2016, a total of 463 intracranial aneurysms were treated by stent-assisted coil embolization. Of these, 132 small saccular aneurysms displayed filling of the sac by contrast immediately after the coiling. TOF-MRA or conventional angiography were used for postoperative monitoring according to our institutional protocol. Progressive thrombosis was defined as complete occlusion of these aneurysms at the 6-month follow-up. Progressive occlusion rates and related risk factors were assessed using binary logistic regression analysis.

Results In 101 (76.5%) of the 132 aneurysms that showed filling of the sac with contrast, complete occlusion was observed on follow-up imaging studies at 6 months. Binary logistic regression analysis demonstrated that progressive occlusion was linked to smaller neck diameter ($p=0.003$; OR=1.533), hyperlipidemia ($p=0.036$; OR=3.329) and stent type ($p=0.031$). LVIS stent is susceptible to progressive thrombosis than Neuroform stent ($p=0.008$; HR=10.204) or Enterprise stent ($p=0.098$; HR=3.154). In 57 progressively thrombosed aneurysms with follow-up evaluations $\geq$12 months (mean, 25.0±10.7 months, median 18 months), 56 aneurysms (98.2%) exhibited stable occlusion, whereas minor recanalization was observed in only one (1.8%) instance, and major recanalization occurred in none.

Conclusion In small saccular aneurysms occluded incompletely after stent-assisted coil embolization, aneurysms with smaller neck diameters or hyperlipidemia, and LVIS deployment seem predisposed to progressive intra-aneurysmal thrombosis over the course of time.

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E-092 ENDOVASCULAR TREATMENT OF BILATERAL Cavernous Sinus Dural Arteriovenous Fistula: THERAPEUTIC STRATEGY AND FOLLOW-UP OUTCOME

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Objective: Bilateral cavernous sinus dural arteriovenous fistula (CSDA VF) is very rare, in even Asian countries. Clinical and radiologic outcomes of treating such fistulas through endovascular embolization are presented herein.

Materials and Methods All data were obtained from 220 consecutive patients with CSDA VF who were treated from January 2004 to December 2015. Bilateral CSDA VF was identified in 17 patients (7.7%). The clinical and radiologic outcomes of the fistulas were assessed, with emphasis on the technical aspects of treatment.

Results At the time of treatment, 7 and 10 patients presented with bilateral and unilateral symptoms, respectively. In the former cases, four patients had progressed from unilateral to bilateral symptoms. Bilateral fistulas were treated with single-stage transvenous embolization (TVE) in 15 patients, via bilateral IPSs (n=9) and unilateral IPS (n=6). In the other 2 patients with one-sided dominance of shunting, only dominant fistula was treated. Two untreated lesions were found on follow up to have spontaneously resolved after treatment of the dominant contralateral fistula. Of the 34 CSDA VF lesions, complete occlusion was finally achieved in 32 lesions after TVE. Seven patients (41.2%) developed paradoxical worsening of cranial nerve palsy after TVE. During the follow-up period, 4 patients obtained complete recovery whereas the other 3 remained with deficits.

Conclusions With adjustments of endovascular procedures to accommodate distinct anatomical configurations, endovascular treatment for bilateral CSDA VF can achieve excellent angiographic occlusion results. However, paradoxical aggravation of symptoms after TVE may occur frequently in bilateral CSDA VF. In the patients with one-sided dominance of shunt, treatment of only dominant fistula might be an alternative option.

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E-093 EMBOLIC STROKE OF UNDETERMINED SOURCE: THE ROLE OF THE NONSTENOTIC CAROTID PLAQUE

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Cryptogenic stroke, or stroke of undetermined cause, presents a remarkably challenging dilemma for the treating physician as there are limited therapeutic options to prevent recurrence. Roughly one third of transient ischemic attacks (TIAs) and ischemic strokes are classified as cryptogenic, with an even greater proportion in young patients.1 While classification systems have been successfully used in trials to refine therapeutic approaches specific to subtype, there has been little progress made in secondary prevention of cryptogenic stroke.2–5 The Cryptogenic Stroke/ESUS International Working Group recently proposed a new entity under the realm of cryptogenic stroke called embolic stroke of undetermined source (ESUS).3 This clinical construct emerged from data suggesting thromboembolism as the primary etiology of cryptogenic strokes.2–3 Three ongoing trials are evaluating the use of novel oral anticoagulants in the prevention of recurrent ESUS, while others are identifying the burden of covert atrial fibrillation in this population.4–5 While current trials are addressing covert atrial fibrillation as a significant source of embolism, more recent population data has called this hypothesis into question and illustrated the heterogeneity, and often multiplicity, of etiologies (embolic sources).3,8–15 Arteriogenic emboli have long been considered minor-risk potential cardioembolic sources.3 As part of the required diagnostic workup to define ESUS, carotid imaging, and advances therein, provides a unique opportunity to prospectively determine a subset of patients who may benefit from aggressive medical therapy or endovascular interventions in the prevention of recurrent ESUS.3 Here we review the role of the nonstenotic, and potentially vulnerable, carotid plaque in ESUS.

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E-094 URGENT TRANSVERSE SINUS STENTING FOR REFRACTORY VISION LOSS IN IDIOPATHIC INTRACRANIAL HYPERTENSION: A CASE REPORT

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Transverse sinus stenosis is common in patients with Idiopathic Intracranial Hypertension (IIH) and transverse sinus (TS) stenting is an emerging treatment option for certain patients. We present a case of refractory vision loss in a patient with IIH treated by urgent TS stenting.

The patient is a 31 year old African American female with type II diabetes mellitus, asthma, obstructive sleep apnea, and morbid obesity who presented with rapidly deteriorating visual acuity after a more gradual decline over three to four months associated with intermittent and progressively worsening headaches, exacerbated by supine positioning. Initial ophthalmologic examination revealed marked bilateral optic nerve head swelling. Routine CT and MR examinations of the brain were unremarkable. Intracranial MR venography revealed a high grade stenosis of the dominant right transverse sinus. A diagnostic and therapeutic lumbar puncture was performed, revealing a markedly elevated opening pressure of 53 cm H2O, with closing pressure of 28 cm H2O after removal of 32 mL CSF. Laboratory CSF analysis was unremarkable. The patient experienced a transient improvement in symptoms, but the vision loss rapidly recurred over the next day. Subsequently, intracranial catheter venography was performed, redemonstrating the aforementioned high grade stenosis of the dominant right TS with a less severe stenosis of the nondominant left TS. Prestenotic TS pressure measured 70 mmHg; poststenotic sigmoid sinus pressure measured 20 mmHg for a gradient of 50 mmHg across the stenosis. After balloon angioplasty and placement of a self-expanding stent, the gradient was reduced to 1 mmHg with pre- and poststenotic pressures of 21 and 20 mmHg, respectively. After the procedure, the patient reported significant improvement in visual acuity and she was discharged the next day on daily aspirin ( indefinitely) and pla-vix (3 months).

The case demonstrates an example of the viability of urgent TS stenting in select patients with IIH and refractory symptoms. While this case is unique in that our patient suffered rapid vision changes necessitating urgent intervention, her clinical course also reiterates the potential utility of TS stenting in patients with less acute presentations.

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