

Abstract E-023 Figure 1 Infarct evolution curves based on DWI lesion size for the four groups all data has been normalized to the rTTP total infarct size. Gray area represents the standards error of the mean

Results Of the 23 dogs used in the active group, 5 were excluded due to spontaneous recanalization or lack of sufficient infarct on DWI. From the included 18 dogs, 11 were identified as rapid progressors, and 7 as slow. The figure shows the average infarct growth rate for the four groups, showing the oxygen carrier increasing the time needed for the infarct to reach 50% of its expected size by approximately 45 minutes in the rapid group, and 30 minutes in the slow. Overall the final infarct size was reduced in both the rapid and slow groups, 0.99 vs 0.87 control versus treatment, and 0.97 vs 0.92 control versus treatment, respectively ($p < 0.001$ and 0.022).

Conclusions Oxygen carrier therapy shows promise to slow down the infarct growth after an LVO, allowing for more time to perform mechanical thrombectomy. Not only was the time to 50% infarct increased, but after 5 hours, the infarct in the oxygen carrier groups still showed an area of penumbra.

REFERENCE

1. *Transl Stroke Res.* 2019 Sep 3.

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E-024 SPONTANEOUS VERTEBRAL ARTERIOVENOUS FISTULA MIMICKING BRACHIAL RADICULO-PLEXOPATHY: A CASE REPORT

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Vertebral arteriovenous fistulas (VAVF) are uncommon, high-flow communications between a vertebral artery and surrounding venous plexus that occur spontaneously or secondary to trauma. A 57-year-old female presented with a multi-day history of rapidly progressive numbness and weakness in the left C5-C6 dermatomes. Her physical exam findings and subsequent electrophysiological testing were suggestive of a brachial radiculo-plexopathy. Noninvasive imaging demonstrated venous congestion with multilevel compromise of the left-sided cervical foramina, and subsequent vertebral angiography confirmed a VAVF, which was treated with trapping of the involved VA segment. Her numbness and weakness progressively improved with concurrent involution of the dilated veins. An exceptional case of VAVF manifesting as a brachial radiculo-plexopathy is presented. VAVF are rare, though they may be considered as a potential underlying cause in patients with comparable symptoms. Endovascular embolization has been demonstrated as a safe and efficacious method in treating VAVFs, though multiple patient-specific factors must be contemplated.

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E-025 TRANSORBITAL ENDOVASCULAR EMBOLIZATION OF CAROTID-CAVERNOUS FISTULAS: A CASE SERIES

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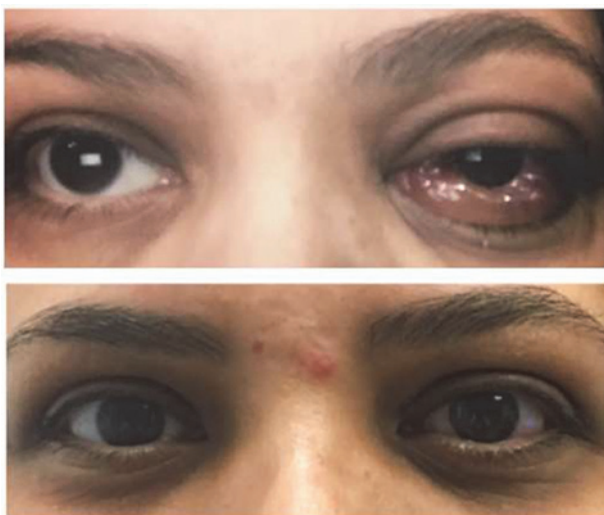
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Introduction/Purpose Carotid-cavernous fistulas (CCFs) are typically managed by embolization, with varied approaches described. Direct transorbital venous access may be utilized if anatomic constraints limit fistulous access via standard venous or arterial access. We present eight cases of successful CCF obliteration through direct transorbital puncture of the cavernous sinus or through indirect cannulation via the superior or inferior ophthalmic veins.

Materials and Methods Patient data was gathered through retrospective chart review from August 2017 to December 2019. Demographics, fistula type, treatment method, obliteration status, and complications were recorded.

Results Eight patients (M:4, F:4, age 44 ± 15 years) were identified who underwent a transorbital approach for treatment of CCF. Six CCFs were spontaneous, and two were deemed to be traumatic in nature following motor vehicle accidents. One patient had a direct fistula (Barrow type A), while the remainder had indirect fistulas (Barrow types B, C, D). Three patients underwent a direct transorbital embolization; one underwent transarterial embolization followed by transorbital embolization; one underwent transarterial embolization, attempted transvenous embolization, followed by a direct transorbital embolization; one underwent attempted transvenous embolization followed by direct transorbital embolization; and two underwent transarterial embolization, followed by transvenous embolization, followed by direct transorbital embolization.

Fistulous occlusion was achieved in all patients following transorbital embolization. Seven patients demonstrated complete resolution of ophthalmic symptoms with normalization of intraocular pressures. One of these patients required an immediate post-operative lateral canthotomy due to transient



Abstract E-025 Figure 1 A 45-year-old female presented with one month of left eye swelling, injection, and pain with associated double vision (top image). Two months after the transorbital CCF embolization, she had resolution of all ophthalmologic symptoms (bottom image)

elevated intraocular pressure from complete occlusion of the inferior orbital vein, though no visual sequelae were noted at follow up and intraocular pressure normalized over the following weeks. One patient who underwent multiple interventions—and ultimately fistula obliteration—progressed to blindness in the affected eye as her treatment course was prolonged.

Conclusion Direct percutaneous transorbital puncture is a generally safe and effective means of accessing and treating CCFs. Ophthalmologic cut-down is unnecessary in most cases, and inaccessibility of the superior or inferior orbital veins can be overcome through direct transorbital puncture of the cavernous sinus.

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E-026 AROUND THE BLIND CORNER OF THE MOUTH: A GLIDE-SCOPE DIRECTED ACCESS TO OROPHARYNGEAL VENOLYMPHATIC MALFORMATIONS

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Introduction/Purpose Low flow vascular malformations can present anywhere in the body with high prevalence in the head and neck region. Locations in the oropharynx at the base of the tongue or peritonsillar space can complicate percutaneous sclerosant application for minimally invasive treatment of symptomatic lesions. Both anterior transfacial and posterior transcondylar approaches can be limited by a small working window of access to the lesion with potential high risk complication to adjacent surrounding sensitive organs and major vasculatures. Thus, limited visibility for direct percutaneous access into low flow vascular malformation in the oropharynx may exclude a large population of patients to an alternative option to treatment other than surgery. Thus, the purpose of

our study is to describe a novel approach using the Glide-Scope, a commonly use device during difficult airway intubation, for access into otherwise difficult and often out of reach low flow vascular malformation in the oropharyngeal space.

Materials/Methods Single center retrospective review of 4 cases of oropharyngeal venolymphatic malformation, 3 of which utilized a combined Glide-Scope directed and fluoroscopic guided sclerotherapy technique while the remaining were performed via the transfacial or transcondylar approach.

Results Please see table 1.

Abstract E-026 Table 1

Patient	Fluoro Time (minutes)	Procedure Time (hours)	Patient Response
1	1.30	2.3	Asymptomatic.
2	3.49	1.1	Decreased lesion size. Asymptomatic.
3	1.87	0.5	Asymptomatic.

Conclusion Symptomatic low flow oropharyngeal vascular malformations can be technically challenge during initial access for percutaneous sclerotherapy. Our single center retrospective experience reviewed 4 cases, 3 of which were via a novel approach in gaining direct access into oropharyngeal venolymphatic malformations utilizing a video assisted Glide-Scope. We demonstrate high technical success, reduced fluoroscopic and procedural time, and excellent patient response.

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Abstract E-026 Figure 1