

O-033 **PORCINE DURAL VENOUS SINUS CADAVERIC ASSESSMENT AS AN IN-VIVO MODEL FOR VENOUS SINUS STENOSIS AND STENTING RESEARCH**

¹D Heiferman*, ²S Ayock, ³J Peterson, ⁴V Nguyen, ⁵C Nickle. ¹Neurological Surgery, Northshore Edward-Elmhurst Health, Naperville, IL, USA; ²University of Tennessee Health Science Center, Memphis, TN, USA; ³Neurological Surgery, University of Kansas Health System, Kansas City, KS, USA; ⁴Neurological Surgery, University of Southern California, Los Angeles, CA, USA; ⁵Neurological Surgery, Semmes Murphey Clinic, Memphis, TN, USA

10.1136/jnis-2023-SNIS.33

Introduction Despite the significant increase in utilization in dural venous sinus stenting, the underlying cause and pathophysiology of these stenoses remains poorly understood. In vivo research has been lacking in this area, as there is currently no established animal model to study venous sinus stenosis and stenting. Recent studies have shown promise for the potential for a porcine model for this pathology.

Methods Craniotomies were performed on six adult pig heads slaughtered for food production. The dorsal sagittal and bilateral transverse-sigmoid sinuses were isolated. Each sinus length was measured. The dorsal sagittal sinus was sectioned at its midpoint. Vascular dilators, ranging from 3 French to 14 French were serially inserted into the anterior and posterior dorsal sagittal and bilateral transverse-sigmoid sinuses until resistance was met to assess their diameter.

Results Dorsal sagittal sinus length ranged from 8-9.5cm. Anterior dorsal sagittal sinus diameter ranged from 5-12 French and posterior ranged from 8-12 French. Right transverse-sigmoid sinus diameters ranged from 6-11 French and one was hypoplastic, and the left ranged from 4-12 French and one was hypoplastic.

Conclusion The porcine dural venous sinus system share some characteristics to human's, including right and left variability, including hypoplastic sinuses, and the wider posterior dorsal (superior) sagittal sinus. With the relatively straight anatomy of the dorsal sagittal sinus, the minimum length of 8cm, and the posterior diameter measuring between 8-12 French (2.7-4.0mm), this anatomy may be suitable for the implantation of intravascular stents for the assessment of stent neointimalization within the dural venous sinus system.

Disclosures D. Heiferman: 4; C; Concierge Innovation, LLC. S. Ayock: None. J. Peterson: None. V. Nguyen: None. C. Nickle: 4; C; Concierge Innovation, LLC.

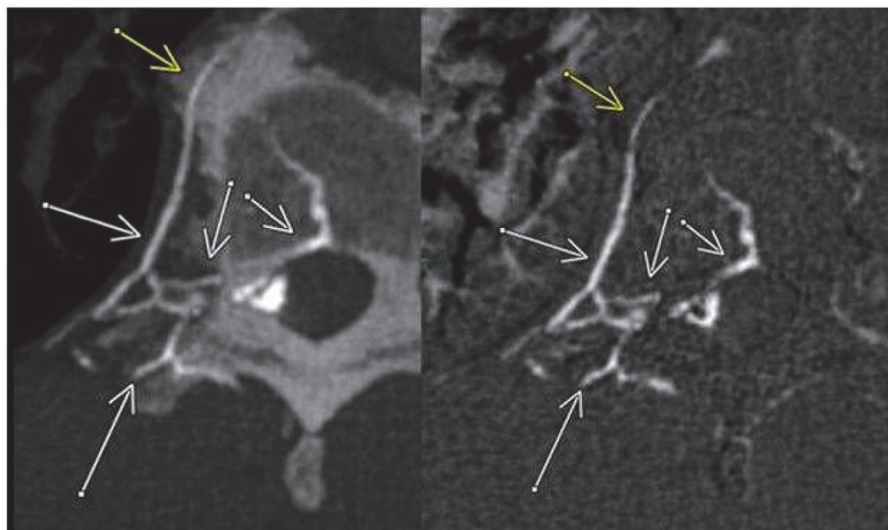
O-034 **CHARACTERIZATION OF CSF-VENOUS FISTULA VENOUS DRAINAGE PATTERNS AND SPECIFIC SITE OF FISTULA ORIGIN: IMPLICATIONS FOR TRANSVENOUS EMBOLIZATION**

T Huynh*, D Parizadeh, O Fermo. Mayo Clinic Florida, Jacksonville, FL, USA

10.1136/jnis-2023-SNIS.34

Introduction Transvenous embolization of CSF-venous fistulae (CVF) associated with spontaneous intracranial hypotension (SIH) is an emerging highly efficacious and safe treatment. Venous drainage pattern and location of fistula associated with the CVF however may vary significantly and may have implications for embolization treatment planning including venous microcatheter navigation and targeting of embolic material. We sought to systematically characterize the CVF venous drainage patterns and specific sites of CVF origin. **Methods** A retrospective review of SIH patients who underwent transvenous embolization of CSF-venous fistulas at our institution was reviewed. All patients were diagnosed with SIH based on clinical and/or imaging findings and had a definite diagnosis of CVF on dynamic CT myelogram. Venous drainage patterns were categorized into simple drainage pattern (i.e. draining into the foraminal venous plexus and adjacent segmental vein) and complex drainage pattern (i.e. draining into additional veins including intra-osseous, basivertebral/internal epidural venous plexus, adjacent level, or contralateral level veins). Fistulae origin were first categorized as arising directly from either the nerve root sleeve or adjacent diverticulum. We also identified the location of the CVF origin relative to the ipsilateral pedicle and neural foramina given that these are common target landmarks to guide embolization.

Results Twenty-four CSF-venous fistulae in 23 patients were evaluated. Simple venous drainage pattern was seen in all cases; additional complex venous drainage pattern was visualized in 8 (33%) including 4 cases of intra-osseous venous drainage, 3 cases of adjacent level venous drainage, and 1



Abstract O-034 Figure 1 Example of complex CSF-venous fistula drainage pattern including drainage into the basivertebral vein, intra-osseous, and dorsal muscular venous branches. The fistula originates directly from the nerve root sleeve without a significant diverticulum present