E-080

GENDER CHARACTERISTICS, COMORBIDITY AND OUTCOMES OF CEREBRAL VENOUS SINUS THROMBOSIS IN A NOVEL U.S. POPULATION

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Introduction Cerebral Venous Sinus Thrombosis (CVST) has an estimated incidence of 1.32–1.57/100,000/yr, with death or severe disability in less than 10%. There is a reported elevated incidence in young -middle age females. The majority of reported epidemiologic and outcome data has been collected outside the United States (US). Available US data shows low representation of the Appalachian region, which has relatively a higher burden of disease and lower socioeconomic level. The objective of this study was to examine the gender characteristics of CVST patients in the United States, with greater representation of the Appalachian region.

Methods Data were collected in a retrospective cohort using the Kentucky Appalachian Stroke Registry (KAPSR), collected from admissions in a Comprehensive Stroke Center serving 554,300 from the central-eastern United States. All diagnosed CVST patients found in the database from 2010–2018 greater than 18 years of age were included in the data set. Descriptive data were computed using SPSS statistics.

Results 101 patients diagnosed with CVST were included. 58 patients were female (57.4%). Median age was 44 years. The National Institutes of Health Stroke Scale (NIHSS) was reported for 32 female and 21 male patients. Median NIHSS was 5 in females and 0 in males at admission. Median length of stay was 7 days in females vs. 4 days in males. Discharge data were available for 51 female and 33 Male patients. Of female patients, 28 (55%) were discharged to home, 17(33%) were transferred to continued care, 4(8%) were transferred to hospice and 2(4%) died within 48 hours of admission. Of male patients, 25(76%) were discharged to home, 7 (21%) were transferred to continued care, and 1 (3%) was transferred to hospice. Female patients had a higher burden or comorbidities and multimorbidity compared to male patients.

Conclusion The results of this study indicate a higher burden of comorbidity, more severe presentation, and worse prognosis in female patients. This is in contrast to the majority of CVST research, many of which have found the male sex to be an independent risk factor for worse outcomes. This may reflect a particular variant among the Appalachian population.

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E-081

ACUITY CLASSIFICATION SYSTEM FOR NEURO-INTERVENTIONAL SURGERY CASES IN THE EVOLVING WORLD OF HYPERACUTE ENDOVASCULAR STROKE CARE

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Introduction/Purpose NIS (Neuro-Interventional Surgery) as a sub-specialty has undergone a tremendous transformation in many regards since its early beginnings. A major area of change includes the demand for the NIS provider to be immediately available while on call, particularly as it pertains to MER (mechanical endovascular reperfusion) for ELVO (emergency large vessel occlusion) type acute ischemic strokes. MER for ELVO's can be regarded amongst the most pressing hyper-acute emergencies in all of medicine, thereby placing a substantial demand on the providers and healthcare facilities offering this treatment. As endovascular stroke care continues to evolve, so too will the number of hyper-emergent NIS cases which have already risen dramatically, leading to an increased potential for NIS provider burnout. We propose an acuity classification system which may assist individual healthcare systems providing NIS care to better assess the degree of change over time and prepare for the future.

Materials and methods We retrospectively reviewed just under 21-months of NIS cases completed at our facility from 7/01/2017 through 3/22/2019. These cases were classified into four categories based upon their level of acuity with regard to how quickly the patient ought to be brought to the neuro-angiography suite for the procedure per the NIS provider's discretion. The type of NIS case deemed 'hyper-emergent' will vary from provider to provider, but by using a classification system based upon the acceptable degree of time delay from the procedure's decision start point to the patient's arrival to the neuro-angiography suite, unique data for an individual healthcare system can be generated and compared over time. In general, hyper-emergent NIS cases include all ELVO's, as well as select cases of intracranial and extracranial hemorrhage.

Results Our healthcare system experienced a notable increase in the number and percentage of hyper-emergent NIS cases relative to less acuity level cases. In our facility, this data will be used for internal healthcare system review for various purposes, including resource allocation and NIS provider on-call coverage assessments. As these data points will most certainly be facility specific, only our facility's current and recent acuity level percentage breakdown is listed for example purposes. For reference, our elective caseload volume has stayed relatively stable over time, confirming a true increase in the hyper-emergent caseload volume by number and percentage.

Abstract E-081 Table 1

NIS Case Acuity Level	NIS Decision to Expected Patient Suite Arrival Time	Our Facility's NIS Case Percentage Breakdown	
		7/01/2017 to 6/30/2018	7/01/2018 to 3/22/2019
A) Hyper-Emergent	Less Than 60 Minutes	10.6%	13.6%
B) Emergent	Less Than 12 Hours	7.1%	12.0%
C) Urgent	Same Hospital Stay	29.6%	28.9%
D) Elective	Outpatient Scheduled Case	52.7%	45.5%
	All Cases	100.0%	100.0%

Conclusion Our healthcare system has observed an increase in the number and percentage of hyper-emergent NIS cases over time, chiefly as a result of the research-driven expansion of the indications and selection of ELVO patients for MER. As

hyper-emergent NIS caseload volumes continue to increase, comparison of current and prior caseload acuity trends may allow the individual healthcare system to better optimize for efficient resource allocation, provider coverage determination, and fair on-call provider reimbursement.

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E-082 ENDOVASCULAR PREOPERATIVE EMBOLIZATION FOR TEMPOROMANDIBULAR JOINT REPLACEMENT SURGERY

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Background and purpose This retrospective study evaluates the safety and effectiveness of preoperative endovascular embolization in patients who underwent temporomandibular joint (TMJ) replacement surgery.

Material and methods We included all patients treated with preoperative embolization of the internal maxillary artery (IMAX) between June 2016 and January 2019. All patients were treated by the same surgeon using standard surgical approaches and procedures. Periprocedural adverse events, blood loss during surgery and clinical follow-up are reported.

Results Fourteen patients (12 females, mean age 32.5) were treated with 19 embolizations of the internal maxillary artery (bilateral embolizations in 7 patients) prior to TMJ replacement surgery with prosthetic joints (TMJ Concepts prostheses). Seven patients presented with TMJ ankylosis/degenerative joint disease/post-trauma deformity, 4 patients with Idiopathic Condylar Resorption and resultant mandibular displacement/hypoplasia, 2 patients with rheumatoid arthritis-associated condylar degeneration and resultant loss of mandibular position, and 1 patient being re-reconstructed following management of a prosthetic joint infection. Seven patients underwent bilateral prosthetic joint replacement. Four patients underwent

Abstract E-082 Figure 1 A 17-year-old female with past medical history of mandibular hypoplasia presenting for preoperative embolization of bilateral internal maxillary arteries. A. Pre-embolization angiogram (lateral view) of the left external carotid artery. B. The internal maxillary artery was completely embolized with coils (asterisk) with preservation of the left middle meningeal artery (MMA) (arrow) and the occluded accessory meningeal artery (AMA) got reconstituted (double arrows). Following temporomandibular joint surgery, patient had paresthesia on the left trigeminal nerve distribution more than the right at last follow-up

additional facial skeletal surgery as part of their treatment. The median blood volume loss during TMJ surgery was approximately 370 cc per patient and 246 cc per TMJ replacement surgery (range 100 cc to 800 cc). Joint space-specific blood loss was not recorded but, as per the surgical team, was significantly decreased when compared to non-embolized patients. There were no intra-procedural complications. The mean clinical follow-up was 7.1 months (range 1–24 months). The modified Rankin scale (mRS) was 0 before the procedure and at last clinical follow-up in all patients. After TMJ surgery, 3 patients reported paresthesia of the trigeminal nerve likely related to the residual condyle resection and 3 patients had mild facial nerve weakness (Temporal and/or Marginal Mandibular branch) related to the surgical exposures.

Conclusion Endovascular preoperative embolization of the internal maxillary artery (IMAX) is feasible and safe and likely effective in reducing blood volume loss in complex TMJ replacement surgery.

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E-083 COIL MIGRATION FOLLOWING INTERNAL CAROTID ARTERY PSEUDOANEURYSM OBLITERATION

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Introduction Carotid blowout syndrome (CBS) refers to the acute rupture of any segment of the common carotid artery, including both the external and extracranial internal carotid arteries (ICA). CBS often results in life threatening hemorrhage and acute upper airway obstruction. CBS is a well-known phenomenon in patients with head and neck cancer and typically occurs via direct extension of tumor into the arterial wall or iatrogenically during surgical manipulation. With a reported incidence of 4.3% following radical neck dissection and mortality rates as high as 60%, CBS must always be considered in any patient with head or neck cancer and acute hemorrhage in the oro- or nasopharynx of unknown origin. Accepted management strategies for CBS include open surgical ligation or endovascular treatment via parent vessel sacrifice or intraluminal stent placement. One of the more feared complications associated with endovascular parent vessel sacrifice is distal migration of embolic material, which can lead to ischemic stroke. Delayed migration of embolic material into the oro- or nasopharynx is extremely uncommon. We present a case of a coil migration into the nasopharynx one year following endovascular treatment of CBS that occurred during nasopharyngeal carcinoma resection.

Methods A 41-year-old female presented with brisk oral cavity hemorrhage after undergoing surgical resection of nasopharyngeal carcinoma seven weeks prior.

Results Computed tomography angiography (CTA) revealed a small 0.2×0.2×0.3 cm pseudoaneurysm arising from the medial aspect of the right ICA at the level of C1-C2 vertebrae that abutted the nasopharynx. After radiographically passing a balloon test occlusion (BTO), the decision was made to endovascularly sacrifice the right ICA. With the balloon inflated, embolization with coils and onyx was performed in the