P.127

Hemodynamic factors of internal carotid artery blister aneurysms: role of the Wall Shear Stress Distribution

T Martin (Montreal) G El Hage (Montréal) D Shedid (Montréal) MW Bojanowski (Montréal)*

doi: 10.1017/cjn.2023.216

Background: The pathophysiology of internal carotid artery (ICA) blister aneurysms is poorly understood. Our goal is to investigate the hemodynamic factors contributing to their formation and progression using computational fluid dynamics. Methods: We developed software allowing 3D reconstruction of type I and II blister aneurysms (Bojanowski et al., 2015) from ICA angiography. Kinematic blood flow data was obtained using a finite volume solver. We compared the wall shear stress distribution (WSS) of the healthy arterial wall under various blood pressure conditions. Results: WSS was maximal on the dorsal wall of the supraclinoid segment of the ICA at the distal part of the future site of the aneurysm sac, suggesting that the aneurysm sac initially develops in a retrograde fashion. The WSS gradient (WSSG) was maximal at both the proximal and distal boundaries of the bulging aneurysm. Hypertension exponentially exacerbates the WSS distribution. Very low WSS associated with a high WSSG at the proximal part of the aneurysm sac could explain the extension of the hemorrhage proximal to the forming blister. Conclusions: WSS and its gradient participate in the formation and progression of blister aneurysms of the supraclinoid segment of the ICA. Increasing blood pressure contributes exponentially to the formation of blister aneurysms.

P.128

Recurrent subarachnoid hemorrhage secondary to Chiari 1 malformation

MK Tso (Kelowna) D Omahen (Kelowna)*

doi: 10.1017/cjn.2023.217

Background: We describe a patient with recurrent subarachnoid hemorrhage (SAH) secondary to Chiari 1 malformation. Methods: A retrospective review of the clinical chart was performed. Results: A previously healthy female in her 70's presented with worst headache of life. CT demonstrated 4th ventricular hemorrhage with SAH extending into the bilateral cerebellomedullary fissures. CTA did not show a vascular etiology and patient was discharged home. Incidental note was made of a right persistent trigeminal artery. The patient then represented 2 weeks later with worst headache of life and decreased level of consciousness. CT demonstrated extensive SAH extending into the 3rd and 4th ventricles. CTA and diagnostic cerebral angiogram did not show a vascular etiology. MRI brain/C-spine revealed Chiari 1 malformation. An external ventricular drain was placed but could not be weaned. She underwent suboccipital craniectomy with C1 laminectomy. Intraoperatively, there was a prominent dorsal spinal vein that appeared under tension as it pierced the arachnoid membrane and subsequently entering the dura as a rudimentary occipital sinus. This vein was coagulated and divided. The patient recovered well and was at neurological baseline at 6 month follow-up. Conclusions: This is the first reported case of recurrent SAH secondary to Chiari 1 malformation.

P.129

Endovascular coiling of ruptured basilar fenestration aneurysm: case report and review of literature

E Liu (Saskatoon) P Toyota (Saskatoon) B Newton (Saskatoon) N Pendleton (Saskatoon) K Marciniuk (Saskatoon) A Persad (Saskatoon) L Peeling (Saskatoon) M Kelly (Saskatoon)*

doi: 10.1017/cjn.2023.218

Background: Basilar fenestration is a rare congenital anomaly. When present, it is commonly found at the proximal portion of the artery near the vertebrobasilar junction. Methods: This is a case report of a ruptured basilar fenestration aneurysm in a 47-year-male successfully treated with endovascular coiling. Results: A 47-year-old male presented with sudden onset headache, neck pain, blurry vision, nausea, vomiting, and diaphoresis. Cerebral angiogram revealed a saccular basilar fenestration aneurysm located at the vertebrobasilar junction measuring 3.1 x 2.6 x 3.4 mm with a 2.3 mm neck. Multiple coils were placed including Target 360 Nano 2mm x 4 cm (Stryker, Kalamazoo, MI, US), Target 360 Nano 1.5 mm x 2 cm (Stryker, Kalamazoo, MI, US), and Target Helical Nano 1.5 mm x 1 cm (Stryker, Kalamazoo, MI, US). A repeat angiogram revealed complete exclusion of the aneurysm with preservation of both vertebral arteries. Conclusions: A literature review was conducted on basilar fenestration aneurysms which included 158 patients from 39 studies. Overall, complete exclusion of the aneurysm was achieved in 75.8% of cases, with 22.4% of cases having residual flow and 1.8% of cases with unreported exclusion status.

P.130

Efficacy of decompressive craniectomy after subarachnoid hemorrhage: a propensity-matched analysis of a South Australian Cerebrovascular Registry

TJ O'Donohoe (Melbourne) C Ovenden (Adelaide) G Bouras (Adelaide) S Chidambaram (Adelaide) AS Davidson (Melbourne) T Kleinig (Adelaide) A Abou-Hamden (Adelaide)*

doi: 10.1017/cjn.2023.219

Background: The efficacy of decompressive craniectomy (DC) for patients with intracranial hypertension secondary to aneurysmal subarachnoid haemorrhage (aSAH) remains unclear. Methods: We identified aSAH patients who underwent DC following microsurgical aneurysm repair from a prospectively maintained cerebrovascular registry and compared their outcomes with a propensity-matched cohort who did not. Results: A total of 45 aSAH patients underwent DC between 01/09/2011 and 20/07/2020 and were compared with 45 propensity-matched controls. There were no differences in patient age (p=0.48), gender (p=0.53) or the proportion requiring endovascular vasospasm treatment (p=1.00). However, patients in the DC subgroup had a higher mean WFNS grade (3.47±1.53) compared with matched controls (2.8±1.25, p=0.03). Patients treated with DC had a higher rate of inpatient mortality (20.00% vs 0.00%, p=0.0025), unfavourable outcome (mRS≥4) at 1st (42.22% vs 11.11%, p=0.0016) and final (31.11% vs 2.94%, p<0.001) follow-up, and NIS-Subarachnoid Hemorrhage Outcome Measure positivity (40.00% vs 13.33%, p=0.0079). They also had a

higher median mRS at 1st [3(2–4) vs 1(1–2), p<0.001], and final [2(1–4 vs 1(1 (0–2), p<0.001] follow-up. Conclusions: Patients treated with DC fared worse at every endpoint, which was disproportionate to the difference in presenting WFNS grade. These data do not support the use of DC following microsurgical clipping of a ruptured aneurysm.

P.131

Outcome prediction in patients with aneurysmal subarachnoid hemorrhage undergoing microsurgical aneurysm repair: analysis of a South Australian Cerebrovascular Registry

TJ O'Donohoe (Melbourne) C Ovenden (Adelaide) G Bouras (Adelaide) S Chidambaram (Adelaide) AS Davidson (Melbourne) T Kleinig (Adelaide) A Abou-Hamden (Adelaide)*

doi: 10.1017/cjn.2023.220

Background: Accurate outcome prediction among patients with aneurysmal subarachnoid haemorrhage (aSAH) has remained elusive. We aimed to identify outcome predictors and develop a model to guide clinicians and the families of patients who are being considered for microsurgical repair of a ruptured aneurysm. Methods: We identified 246 consecutive patients with aSAH who underwent microsurgical clipping of the culprit aneurysm between 01/09/2011 and 20/07/2020. Independent predictors of outcome were identified using logistic regression and an outcome prediction model was developed. Results: Age>55 (OR3.35, 95%CI 1.06–10.56, p=0.04), high-grade aSAH (WFNS≥4) (OR7.82, 95%CI 2.66–22.98, p<0.001) and midline shift of ≥5mm (OR10.35, 95% CI 3.22–22.23, p<0.001) were all associated with unfavourable outcome (mRS≥4) at a mean of 87.27 (±53.40) days after ictus. Age>55 was also associated with inpatient mortality (OR4.98, 95%CI 1.83–13.54, p=0.002) and unfavourable outcome at final follow-up (OR3.76, 95%CI 1.26–11.20, p=0.002). Furthermore, midline shift of >5mm was significantly associated with inpatient mortality (OR5.55, 95%CI 1.74–17.64, p=0.004) and unfavourable outcome at final follow-up (OR9.71, 95%CI 3.25–29.04, p<0.001). Conclusions: Older age, poorer presenting WFNS grade and increased mass effect are all associated with poorer outcome among patients undergoing microsurgical clipping of a ruptured aneurysm. These data have been used to construct an outcome prediction model for these patients.

Other Multidisciplinary

P.133

Women in Canadian neurosurgery: an update

C Veilleux (Calgary) EL Figueroa (London) N Samuel (Toronto) H Yan (Toronto) G Rosseau (Washington) M Hodaie (Toronto) G Zadeh (Toronto) G Milot (Canada)*

doi: 10.1017/cjn.2023.221

Background: Women continue to represent a minority of the neurosurgery workforce in Canada. We herein aim to provide an update of the current Canadian landscape to gain a better understanding of the factors contributing to this disparity. Methods: Chain-referral sampling, interviews, personal communications, and online resources were used as data sources. Online survey results obtained from women attending neurosurgeons across Canada were also utilized. Quantitative analyses were performed, including summary and comparative statistics. Qualitative analyses of free-text responses were performed using axial and open coding. Results: We observe a positive trend in the incoming and graduating of female residents across the country, although this trend is lagging compared to other surgical specialties. The proportion of women in active practice remains low. Positive enabling factors for success include supportive colleagues and work environment (52.6%), academic accomplishments (36.8%), and advanced fellowship training (47.4%). Perceived barriers reported included inequalities regarding career advancement opportunities (57.8%), conflicting professional and personal interests (57.8%), and lack of mentorship (36.8%). Conclusions: Women continue to represent a small proportion of practicing neurosurgeons across Canada. Our work highlights several key factors contributing to the low representation of women in neurosurgery and identifies actionable items that can be addressed by training programs and institutions.

Other Neurosurgery

P.134

Neurosurgery research output in The Association of Southeast Asian Nations (ASEAN) region: a scientometric analysis

P Rosales (Manila) C Escuadra (Manila)*

doi: 10.1017/cjn.2023.222

Background: Various challenges and innovations have led to the evolution of neurosurgery in the ASEAN region. This has increased interest among neurosurgeons to publish research papers for the past years. The study aims to compare the publication trend, and topic trend on research in the region using scientometric techniques. Methods: Publications from Web of Science (WoS) using the keywords "neurosurgery" OR "neurological surgery." were obtained. Results only included English articles published from ASEAN countries. Publication, citation, collaboration, and text-co-occurrence analysis were done using WoS and VOSViewer. Results: 1951 articles published between 1996 to 2022 were analyzed. The ASEAN countries' productivity are: Singapore (34.07%), Thailand (21.66%), Indonesia (15.25%), Malaysia (14.72%), Philippines (5.99%), Vietnam (5.15%), Cambodia (1.78%), Myanmar (1.16%), Brunei (0.21%). Singapore, Thailand, Malaysia, and Indonesia were the top research collaborators. Publications have clusters of co-occurring keywords: (1) seizure, aneurysm, pain; (2) traumatic brain injury, mortality, functional outcome; (3) technology, application; (4) survey, training; (5) glioblastoma, brain metastases, chemotherapy. Conclusions: Trend in publications support the growing importance of neurosurgery. Variations in