

surgeries. *Results:* 14 surgeries were performed in 11 patients (three patients had bilateral SSCD). Most patients were males (82%). Age range was 32-68 years. Surgeries were done by a team of a neurosurgeon and a neuro-otologist. Localization of SSCD was done using stereotactic guidance. Five layers' reconstruction was performed in all patients. All patients had significant improvement in symptoms without sensorineural hearing loss. None of the patients developed post-operative hematoma, infection, seizures, CSF leakage or facial palsy. LOS was 1-2 days. *Conclusions:* MCF with multi layers reconstruction should be considered as a safe and effective approach in severely symptomatic patients. We demonstrated that this approach has minimal risks especially in regards to sensorineural hearing loss.

## P.012

### Treatment and long-term follow-up of primary CNS classical Hodgkin's Lymphoma – a case report and review of the literature

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*Background:* Unlike non-Hodgkin's lymphoma, central nervous system involvement with classical Hodgkin's lymphoma is exceedingly rare, thus information regarding treatment and prognostication of the disease is lacking. *Methods:* This case report was prepared using hospital charts, and PubMed for the literature search. Our case was compared and contrasted against similar cases in the literature. *Results:* We present the case of a 47 year old female who presented with a left parietal dural-based lesion which proved to be Stage IE primary CNS classical Hodgkin's lymphoma. After surgery and whole brain radiation therapy, the patient has remained in complete remission over nine years. *Conclusions:* Despite the dearth of information available regarding CNS Hodgkin's lymphoma, our case is consistent with the findings in the literature that long-term survival is possible in patients achieving a complete response to treatment, especially in those patients who present with sole CNS involvement. To our knowledge, this represents the longest reported survival in the literature and contributes to our understanding of prognosis in patients with CNS Hodgkin's lymphoma.

## P.013

### Delaying CT Venograms in patients with skull base fractures improves the sensitivity of screening protocols: report of a case with delayed onset

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*Background:* Cerebral venous sinus thrombosis (CVST) is a possible complication of closed head trauma with reported devastating outcomes. Its incidence however is unclear but believed to be frequent in patients with skull base fractures. The natural history of this under-recognized entity is not yet described, but a sensitive screening method is required to definitively address this question. *Methods:* Case report with literature review. *Results:* We report the case of a patient that sustained a severe head injury as the pedestrian in a motor vehicle accident. The patient required a craniectomy to evacuate an acute subdural hematoma. Post-operatively, a CT veno-

gram was performed and showed patent venous sinuses. A few days later, a double order resulted in a CTV being repeated erroneously but revealed the interval development of significant thrombosis of his left transverse sinus extending to his left internal jugular vein. We report on this patient's outcome and follow-up. *Conclusions:* Further understanding of sinus thrombosis in the setting of TBI is warranted. The natural history is unclear, and most cases are discovered once symptomatic or after developing complications. Our case shows that current protocols have the potential of missing significant cases and study into the optimal timing of imaging is necessary.

## P.014

### The natural history of third ventricle colloid cysts includes asymptomatic regression: a report of two cases and review of the literature

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*Background:* Colloid cysts of the third ventricle are a rare entity with an unclear natural history. Although intervening in the setting of a symptomatic patient is fairly straightforward, decision-making for asymptomatic patients is not. Few studies address this question and proposed risk factors for cyst progression vary. A cyst diameter exceeding 1 cm is a common indication for surgery. This is rooted in the belief that the natural history is continued growth. A few cases have recently surfaced that suggests some cysts may spontaneously regress without complication. We describe our experience with two such cases and contrast it with those of others. *Methods:* We collected all cases of "colloid cysts" identified as incidental findings on Brain CT scans in a large urban center with available follow-up. We then conducted a comprehensive review of the literature. *Results:* Among all incidental cases from our database, none required surgery and two were found to decrease in size on neuroimaging surveillance with interesting evolution in MRI signal characteristics. These cysts remain asymptomatic at last follow up. *Conclusions:* The natural history of colloid cysts includes spontaneous regression. This should be mentioned in counseling asymptomatic patients.

## P.016

### Early telephone follow-up for traumatic brain injury patients using the Rivermead post-concussion symptoms questionnaire

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*Background:* Patients who require hospitalization for a mild or moderate traumatic brain injury (TBI) are often discharged home with uncertainty around their full recovery. This study examines the frequency and severity of common post-TBI symptoms, as assessed by the Rivermead Post-Concussion Symptoms Questionnaire (RPCQ). *Methods:* All adult TBI inpatients discharged home from the Neurosurgery service were interviewed by phone at two weeks by a rehab-based nurse practitioner. RPCQ components (cognitive, emotional, and somatic) were analyzed; findings and management recommendations were communicated to family practitioners and the

treating neurosurgeon. *Results:* In 46 patients, cognitive symptoms were present in 52%, 91% had somatic, and 100% had emotional symptoms. Fatigue was the most common symptom (67%). Double vision was the least common symptom (4%). Recommendations for managing symptoms, return to work, and need for formal clinical assessment were provided for 37% of cases. *Conclusions:* All patients admitted to neurosurgery with mild or moderate TBI had symptoms at two weeks. The RPCQ is a low-cost structured evaluative tool which highlights needs and provides guidance for patients and caregivers; it also seems effective in identifying those who may require formal clinical assessment.

## P.017

### Efficacy of stereotactic intracavitary instillation of <sup>90</sup>yttrium colloid for treatment of cystic sellar/parasellar tumors

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*Background:* Traditional neurosurgical techniques and/or stereotactic radiotherapy, although effective for solid tumors, can be associated with high morbidity and be relatively ineffective for long-term control of cystic sellar/parasellar tumors. The rationale of our study was to examine the efficacy and safety of stereotactic intracavitary instillation of <sup>90</sup>yttrium colloid for the primary treatment of cystic tumors. *Methods:* As part of a Health Canada approved clinical trial, we have enrolled nine patients (6 females, 3 males; mean age 64, range 43 to 83 years) for treatment of symptomatic and/or enlarging cysts. Ten cystic sellar/parasellar lesions underwent right frontal stereotactic insertion of <sup>90</sup>yttrium colloid to deliver a radiation dose of 200 Gy to the cyst wall. *Results:* Compared with pre-treatment cyst volumes (mean 4.6 cc; range 0.8-16.1 cc), the cysts decreased in size at 3 months (2.6 cc; 0.2-10 cc) with further shrinkage (n=5) at 9 months (1 cc; 0.1-2.7 cc). Of 9 patients with pre-operation visual field defects, 6 showed improvement. The single complication was a delayed (1 month) incomplete CNIII palsy. *Conclusions:* Our early experience indicates that <sup>90</sup>yttrium colloid delivered to a cystic craniopharyngioma provides an efficacious alternative to open surgery for primary treatment of these cystic lesions.

## P.018

### Minimally invasive endoscopic evacuation of intraparenchymal hematomas, a single centre experience

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*Background:* Patients with spontaneous intracerebral hemorrhage (ICH) suffer significant morbidity and mortality with lengthy critical care and hospital stays. Minimally invasive techniques for ICH removal have shown a positive relationship between hemorrhage volume reduction and patient outcome. We describe our single centre experience with endoscopic assisted, neuronavigation guided ICH evacuation using the Apollo system. *Methods:* Patients with ICH treated with the Apollo system since October 2014 were included in this retrospective review. ICH volume, clot reduction, midline shift, ICU and hospital length of stay, discharge disposition and last known

functional outcome were assessed. *Results:* 58 patients were treated, mean age 54.1 years. Starting clot volume was 55.1±30.5cc, which was reduced to 10.2±12cc post-operatively, an average reduction of 80.6±25%. Midline shift improved from 7.1±4.5mm to 4.4±3.2mm. Length of ICU stay was 10.2±7.6 days. Covariate analysis showed greater relative reduction in ICH volume correlated with shorter ICU stay (p=0.01). In-hospital mortality was 27.3%; 29.1% of patients were discharged home either form hospital directly, or after a period of short-stay rehab. *Conclusions:* Significant hematoma volume reduction and improvement in midline shift is possible with the Apollo system. Degree of reduction of hematoma volume was associated with a shorter ICU Stay. Randomized controlled studies will be required to determine long term clinical benefit.

## P.019

### Report from the Canadian Neurosurgery Research Collaborative – One year of resident-led multicentre research initiatives

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*Background:* The Canadian Neurosurgery Research Collaborative (CNRC) was founded in November 2015 as a resident-led national network for multicentre research. We present an annual report of our activities. *Methods:* CNRC meetings and publications were reviewed and summarized. The status of ongoing and future studies was collected from project leaders. *Results:* In its first year, the CNRC produced two papers accepted for publication in the Canadian Journal of Neurological Sciences: A CNRC launch letter and a study of operative volume at Canadian neurosurgery residency programs. Three manuscripts are in preparation: 1) a study of the demographics of Canadian neurosurgery residents, 2) an assessment of mobile devices usage patterns and 3) a validation study of the most utilized neurosurgery mobile apps. In addition, protocols for two multi-centre studies are currently undergoing national Research Ethics Board review: A retrospective study of the incidence and predictors of cerebellar mutism and a prospective registry of external ventricular drain procedures and complications. The network is now a registered not-for-profit organization endorsed by the Canadian Neurosurgical Society. *Conclusions:* The CNRC is a feasible, relevant and productive resident-led national research network. As the CNRC matures, we look forward to expanding the scope and impact of its projects.

## P.020

### A novel scale for describing visual outcomes in patients following resection of lesions affecting the optic apparatus – Unified Visual Function Scale

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*Background:* Historically, description of patient visual acuity and visual field changes following intracranial procedures has been very rudimentary. Clinicians and researchers have relied on the use of