

organization's attempt at overcoming an operative need by designing a remote controlled stereotactic system.

P.007

Symptoms free survival of ventriculoperitoneal shunt versus lumboperitoneal shunt in idiopathic intracranial hypertension: a systematic review

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Background: Idiopathic intracranial hypertension (IIH) is a unique disorder that is characterized by an intractable high intracranial pressure. Several interventions have been in clinical practice upon failure of medical management. Yet, none of the available modalities have been evaluated systematically for an CSF diversion procedure. **Methods:** We conducted a systematic review in order to compare the therapeutic efficacy of the most two common interventions, namely VPS vs. LPS. The complications rate and incidence of shunt revision were assessed. The electronic database from EMBASE, Medline, Cochrane databases, and references of review articles have been used. **Results:** A total of five retrospective comparative studies had been included out of 724 articles based on inclusion and exclusion criteria. A 2570 VPS were compared to 1832 LPS with 85% of heterogeneity. Although there was a tendency that suggests better outcome in VPS over LPS but it was not statistically significant [OR=0.91, 95% CI: 0.26-3.24]. Similar tendency was observed as well with shunt obstruction. **Conclusions:** The overall outcomes for stabilizing visual deterioration and improvement of headaches were similar among VPS and LPS. A large prospective multicenteric randomized controlled trial is needed in order to compare effectiveness of VPS and LPS, and also to establish a treatment guideline for IIH.

P.008

Anterior skull base surgery future: intraoperative flash visual evoked potentials a novel technique to lessen intraoperative optic nerves and chiasmal injury

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Background: Optic nerve/chiasmal injury is a devastating outcome that may happen during endoscopic surgery. Additionally, one of the goals of endoscopic skull-base surgery is visual improvement, currently there is limited ability of intraoperative visual pathway monitoring. We examine a novel technique using continuous flash visual evoked potentials (FVEPs). **Methods:** Eyes were stimulated by light stimulators (3 LEDs on each side, 640 nm peak wavelength, 10 ms pulse width, 3000mCd of luminous intensity). Uniform illumination was placed over eyelids. Recording electrodes were placed at Oz-Fz. The filter cuts were ≤ 5 Hz and 100 Hz with amplifier gain 20,000 or 50,000. EEG was recorded. Recordings were correlated to pre and post operative VFs and acuity. Droop in the FVEP was examined in relation to intraoperative events. **Results:** Thirty patients had FVEPs in addition to other neurophysiologic monitoring. Patients demographic data, co-morbidities, diagnosis, surgical approach, length of surgery, MAP, and blood loss during surgery were recorded.

All patients' visual acuity and field deficits were evaluated by neuro-ophthalmologist before their surgery and within 30 days after surgery. **Conclusions:** FVEP is reproducible throughout surgery and can predict the post surgical outcome. Additionally, we found that FVEP is transiently affected by different stages of surgery. Also boluses of propofol and electrocautery can artificially affect FVEP.

P.009

Cervicomedullary decompression through expanded endoscopic endonasal approach: our clinical experience

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Background: patients with ventral cervical-medullary compression require anterior decompression of the cervicomedullary junction. Odontoid resection can be accomplished through expanded endoscopic approach especially in cases of irreducible basilar invagination in which the pathology is situated well above the palatine line. **Methods:** We are presenting our experience at the Ottawa Hospital (TOH) over the last seven years in patients who underwent expanded endoscopic endonasal decompression of their cervicomedullary junction. 16 patients underwent such procedure, those patients with preoperative cervical instability underwent posterior fusion for stabilization at the same surgical setting. Follow up ranged from 9 months to 5 years. **Results:** All patients had severe symptoms of myelopathy and some lower cranial nerves dysfunction. All patients were extubated after recovery from anesthesia and allowed oral intake next day. patients demonstrated improvement in their symptoms and none of them required tracheostomy. 12.5% experienced transient velopharyngeal insufficiency. one patient had CSF leak which was successfully treated with lumbar drain and one patient developed infection from the posterior cervical fusion and required debridement. All patients were eventually discharged home. Postoperative imaging demonstrated excellent decompression of the anterior cervicomedullary junction pathology. **Conclusions:** The expanded endoscopic endonasal approach for odontoidectomy should be considered as a minimally invasive approach for anterior decompression in selected cases

P.010

5 layers reconstruction, superior semicircular canal dehiscence repair: our experience and surgical technique

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Background: Superior semicircular canal dehiscence (SSCD) is a recently described rare condition. SSCD symptoms include vertigo, oscillopsia, autophony, sound hypersensitivity, and conductive hearing loss. Patients with severe symptoms may require surgical treatment. Tranmastoid and middle fossa (MCF) approaches are common approaches. **Methods:** We are presenting our experience at the Ottawa Hospital over the last three years. Also we describe our multidisciplinary surgical approach and modalities to localize the SSCD intraoperatively. Demographic data, presenting symptoms, comorbidities, radiologic imaging, and surgery length were recorded. All patients had hearing and vestibular tests before and after their

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