publications are attributed to differences in research interest, training, technology and culture between countries. These are relevant to aid in future capacity-building projects, research agendas, policy guidelines, and collaboration between countries, to improve research production.

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Dura splitting technique for surgical resection of spinal meningioma

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Background: Spinal meningiomas are intradural extramedullary tumors that account for 25–46% of all primary spinal tumors. A growing body of literature suggests that the extent of resection significantly affects the recurrence rate of spinal meningiomas and that Simpson grade II resection may not be as adequate as previously thought. Dura Splitting Technique (DST) can be used with no major perioperative complications. Methods: Retrospect review of six cases of spinal meningiomas where DST was used. The patients ranged in age at presentation from 38 to 80 years. All presented with symptoms including gait unsteadiness and lower limbs weakness. Spinal MRI was used to establish the diagnosis. All of the tumors were located ventral or ventrolateral to the spinal cord. Results: DST was applying to spinal meningioma cases,complete tumor resection by separating the involved dura into inner and outer layer. Preserving the dura outer layer and avoiding the need for dural graft reconstruction and CSF leak. A total of six cases, four in thoracic spine and two in cercical spine one anterior and one posterior, all four cases had no reported surgical complications or tumor recurrenc. Conclusions: We confirm that DST is safe and a superior method in the treatment of spinal meningiomas.

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The effectiveness of primary endoscopic third ventriculostomy (ETV) on cognition and gait outcomes in adults with congenital obstructive hydrocephalus (COH)

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Background: Endoscopic third ventriculostomy (ETV) has become a treatment of choice for adults with clinically significant chronic obstructive hydrocephalus (COH). We evaluated the impact of ETV on cognition and gait in adults with COH. Methods: We retrospectively analyzed prospectively collected data from patients who underwent ETV as primary treatment for COH. Cognitive testing using the Montreal Cognitive Assessment (MoCA) and Symbol Digit Modalities Test (SDMT) was obtained pre-ETV at three months and one year postoperatively. Gait velocity was assessed using a 10-m walk test at each time point. Results: A total of 51 patients were identified. The mean age was 55±1 years, and 45% of patients were women. Baseline MoCA was 22.6±3.1, which improved to 25.7±3.0 and 26±3.4 at three months and one year, respectively ($p<0.001$). Half of the patients had a normal MoCA score post-ETV (IQR 26-27 at one year, $p<0.001$). Gait velocity was significantly improved at three months and 1-year post-ETV ($p=0.0036$). The cognitive and gait improvement one year after ETV was clinically significant. Conclusions: Cognition and gait improved at three months; results were sustained at 12 months post-ETV in adult patients with COH. ETV is an efficacious surgical consideration in this population.

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Implementation of Canadian driving guidelines following cranial procedures: a systematic review and survey of Canadian neurosurgeons

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Background: Following craniotomy, there is widespread agreement that post-operative neurological impairments require specialized evaluation to evaluate fitness to drive. However, for patients who had a craniotomy and do not have neurological deficits or known seizures, there is less consensus as to when return to driving is safe. In this study, we aim to review existing guidelines regarding driving post-craniotomy and assess the current practices for post-craniotomy recommendations in Canada. Methods: Our study has three components: 1) systematic review of existing guidelines for return to driving after cranial procedure; 2) review of primary evidence (cohort studies) regarding seizure risk following a craniotomy, depending of the underlying pathology; 3) online questionnaire distributed to Canadian neurosurgeons by the Canadian Neurosurgery Collaborative (CNRC) network. Results: Our systematic review unveiled various sets of guidelines for driving after a craniotomy. For instance, UK Driving and Vehicle Licensing Agency writes into law specific guidelines for return to driving varying based on underlying pathology. Their results were drawn from large cohort studies measuring the occurrence of post-operative seizures after craniotomy for a variety of conditions. The questionnaire is currently being distributed to Canadian neurosurgeons. Conclusions: Our study lays the first steps towards the development of Canadian guidelines for return to driving post-craniotomy.

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Sphenoidal Sinus aspergillus infection presenting with right-sided painful ophthalmoplegia and cavernous sinus-orbital apex lesion: a case report.

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Background: Cavernous sinus-orbital apex aspergillosis is a rare but serious complication and difficult to diagnose based on clinical and radiological results. This condition is frequently

diagnosed at a late stage because of its nonspecific and varying symptomatology, specifically in immuno-supressive patients. Early diagnosis and treatment is the key to prevent more serious central nerves system complications. Methods: We report the case of a 80-year-old man with a 2 month history of retroorbital pain before he developed a subacute cavernous sinus syndrome, with 3th cranial nerve palsy and right-sided painful ophthalmoplegia. Patient was on immune suppression therapy for chronic lymphocytic leukemia. Neuroimaging including CT scan and MRI suggested a malignant tumor involving the sphenoid sinus with extention to cavernous sinus-orbital ape. Results: The diagnosis of aspergillosis was made trans-sphenoidal approach and by histopathological examination. Soon after surgical drainage of the sphenoid sinus and systemic anti-fungal drug therapy, Both retroorbital pain resolved and cavernous sinus syndrome slowly start to recover. Conclusions: This case emphasizes the fact that invasive isolated sphenoid sinus aspergillosis must be considered in the list of lesions causing sinus cavernous syndrome and particularly in immune suppressed patients. Early diagnosis is the key to prevent more serious central nerves system complications.

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Cerebral toxoplasmosis in an HIV-negative patient

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Background: Toxoplasma gondii is a protozoan parasite with the ability to infect any nucleated cell in humans. Most immunocompetent infected individuals are asymptomatic. Latent toxoplasma can become reactivated in immunocompromised individuals though this is exceptionally rare in HIV-negative individuals. Methods: We present the case of a 47-year-old male with chronic immunosuppression secondary to marginal zone lymphoma and steroid therapy. Results: The patient presented to hospital with a 1-week history of word-finding difficulties, intermittent right facial numbness and leg weakness, and tonic-clonic seizures. CT head showed a left temporal heterogenous mass measuring 2.8 × 2.8 × 3.5 cm. Biopsy of the lesion showed Multiple tachyzoites and rare bradyzoites with strong positivity for the toxoplasma specific immunostain. The patient was treated with trimethoprim/sulfamethoxazole which resulted in complete neurologic recovery. Conclusions: Our literature review included 32 cases of cerebral toxoplasmosis in HIV-negative patients with an overall mortality rate of 48%. Cerebral toxoplasmosis has a predilection for immunosuppressed patients with an underlying hematologic malignancy (74%, n= 23). Successful treatment requires early recognition of the disease and prompt treatment with sulfamethoxazole and trimethoprim, pyrimethamine, or sulfadiazine. Patients who recover from acute toxoplasmosis should remain on lifelong suppressive antibiotic therapy to prevent relapse.

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Illustrated case report: CSF shunt peritoneal catheter obstruction due to omental adhesion and fat stranding

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Background: CSF shunt obstruction secondary to omental adhesion alone, without cyst or pseudocyst formation, is rarely reported in the literature. Here we present a case of distal catheter obstruction due to omental wrapping with an atypical presentation of shunt failure. CT imaging demonstrated omental stranding. The shut revision was entirely laparoscopic. The case is supplemented with intraoperative images. Methods: Chart review and literature search. Results: 33-year-old female with right-sided cystoperitoneal shunt for posterior fossa arachinoid cyst who presented to ED with a picture of a surgical abdomen suggestive of acute cholecystitis. Interestingly, this patient had a gallbladder removed a year ago. CT abdomen showed non-specific findings of omental fat stranding around the tip of the catheter. Although this patient had no headache or any neurological symptoms, CT brain was done and showed increase in the cyst size. Diagnostic laparoscopy showed Intraoperative findings suggestive of active omental role in the aetiology of this shunt malfunction. After adequate adhesiolysis, the catheter was noted to be working and dripping CSF and repositioned into the peritoneal cavity. Conclusions: Shunt malfunctions due to omentoperitoneal adhesion is rarely reported but may in fact be under-recognized. This requires high index of suspicion especially in case of equivocal imaging.

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The value of using flash visual evoked potentials monitoring during minimally invasive endoscopic meningioma resection: a retrospective chart review

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Background: Endoscopic endonasal surgeries performed in areas involving the visual pathway are associated with postoperative visual dysfunction. We previously demonstrated that continued eye monitoring during surgery by flash visual evoked potential (FVEP) represents a good method to prevent/reduce visual deficit post-surgery. We wondered whether FVEP monitoring may be more beneficial in patients with meningioma, strongly associated with postoperative visual loss.

The aim was to explore the visual capacity in patients subjected to meningioma resection at The Ottawa Hospital. Methods: A retrospective chart review of patients who underwent minimally invasive endoscopic skull base surgery and FVEP monitoring for meningioma resection (July 2018 to present) was conducted. Only patients with available pre- (up to 3 months)