Purpose: The aim of this study was to identify predictive factors of biological behaviour and patient outcome after surgical resection of meningiomas. Methodology: We retrospectively reviewed 192 cases of meningiomas who had undergone surgical resection in the Department of Neurosurgery at Toronto Western Hospital the last 5 years. Our cohort consisted of 64 males and 128 females. Clinical, radiological, and pathological records were review for data regarding: patientssex, age, tumor grade, tumor location, presence of peritumoral edema prior to surgical resection, and tumors largest diameter as a clinical measure of tumor size. All analyses were performed using IBM SPSS 20.0. Results: The incidence of peritumoral edema was significantly greater in males (45/64, 73%) than in females patients (64/128, 50.0%) (p=0.007). Meningioma location was significantly associated with presence of edema (p<0.001); olfactory meningiomas showed the greatest incidence of edema (71.4%) followed by convexity meningiomas (60.5%), abd sphenoid wing meningiomas (72.2%) (p<0.001). Tumors with larger extrameatal diameters (4.3cm vs. 3.5cm) were more likely to have peritumoral edema (p=0.001). The presence of residual tumor after surgical resection was more likely in meningiomas with higher grades p<0.001. Also, as expected, the grade of tumor was significantly correlated with the incidence of recurrence. Recurrence was also found to be more common in men (15.6%) than in women (4.7%) (p=0.01). Conclusion: The present study demonstrates that specific radiologic and histopathologic characteristics are significant predictors of tumor recurrence and patient outcome.

CP13

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Hematological toxicities in patients with newly diagnosed glioblastoma on concurrent radiation and temozolamide-single institution experience

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Background and Method: Concurrent daily Temozolamide (TMZ) with 60 Gy radiation for 6 weeks followed by adjuvant TMZ 6 cycles is standard therapy for newly diagnosed Glioblastoma multiforme. Recently we had 2 patients with prolonged pancytopenia which prompted us to conduct a retrospective chart review of patients treated at our institution between 2011 to 2013.We recorded demographics, tumor location, comorbidities, treatment details, medications, laboratory data, transfusion and growth factor use. Results: Total 33 patients identified, 20 males and 13 females. Age ranged 36-73 yrs. 5 females developed significant hematological toxicities at 4 to 5 weeks during concurrent phase of treatment. Median duration was 120 days (31-160). Thrombocytopenia Grade 3-4 (5), Anemia Grade 3 (3), Neutropenia grade 3(2) grade 4(2) One patient died at 122 days with sepsis. 13 patients did not start the adjuvant TMZ, 5 due to hematological toxicity, 8 from progression. 21 patients did receive adjuvant TMZ, only 9 completed all 6 cycles. No significant hematological toxicities were noted during the adjuvant phase. All patients completed brain radiation. Conclusions: 15% of our patients developed severe hematological toxicities during the concurrent phase only. Other published studies including EORTC study report 15-20 % toxicities with some occurring during adjuvant phase. We were unable to identify any predisposing factors. Careful ongoing monitoring of blood counts during the entire course of the treatment is thus recommended.

CP14

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Meningeal hemangiopericytoma: Case report and literature review

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We describe the only case of meningeal hemangiopericytoma (MHPC) treated at our centre. 73 year old male presented with 6 month history of left leg weakness, cramping, falls and headaches. MRI of head showed 4 cm parasagittal mass, possibly meningioma. Tumor eroded through dura with invasion into superior sagittal sinus causing significant bleeding. After subtotal debulking of 80% tumor in October 2008, neurological symptoms resolved. MRI in Oct 2009 showed recurrence of tumor at resection site. Subsequently he was referred to cancer center and received radiation (60Gy in 30 fractions). Patient remains well and last evaluation in November 2013 shows no tumor progression clinically or radiologically. MHPC account for less than 2% meningeal tumors. WHO classifies these as soft tissue sarcomas of central nervous system, arising from smooth muscle perivascular pericytes of dural capillaries. Radiological features include lobulated contour, invasion of skull, absence of calcification and hyperostosis, which distinguish MHPC from meningioma. Pathological features, unlike meningioma these tumors are immunonegative for Endothelial Antigen (EMA) and GFAP with abundant pericellular reticulin and CD34 low or negative. Main treatment is surgical resection followed by external beam radiation. Local and systemic recurrences are reported in about 26 percent cases, with metastasis to lung, bone and liver. Overall survival at 5, 10, 15 years is 85, 68, 43 percent. Recurrences can occur late in 5 years to more than 20 years. Long follow up is needed.

CP15

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Lung adenocarcinoma metastasis to skull and scalp: A case report

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Introduction: Tumour metastases that involve the scalp are unusual. We report the case of a patient with a lung adenocarcinoma that was metastatic to both the skull and the scalp. Case Report: A 61-year-old female presented with a scalp mass that increased in size from one cm to 10 cm, over a 7-month period. She had a recent history of 20lb weight loss and anorexia. CT scan revealed a soft tissue mass in the left frontal scalp involving the underlying bone and thickening of dura. Magnetic Resonance Imaging (MRI) three months later exhibited rapid growth of the lytic lesion. Bone scan showed no other primary lesions. Intraoperative biopsy specimen displayed histological characteristics of an adenocarcinoma. The patient was pan-scanned and a primary upper lobe lung lesion with extensive hilar lymphadenopathy was identified. She subsequently underwent operative resection of the lesion and cranioplasty. Pathological examination of tumor biopsy showed a moderately differentiated adenocarcinoma characterized by large irregularly shaped acini embedded in a desmoplastic stroma with a mixed acute and chronic inflammatory infiltrate. Mitotic figures were encountered. The neoplastic cells were immunopositive for CK-CAM5.2, CK 7 and TIF-1 (nuclear), and immunonegative for CK 20, features in keeping with adenocarcinoma. Discussion: We describe an unusual case of lung adenocarcinoma that became metastatic to both skull and scalp. The histopathological features and differential diagnosis of such lesions are discussed in the context of the literature.

CP16

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A mixed method study of a peer support intervention for newly diagnosed primary brain tumour patients

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A pilot program at the BC Cancer Agency enlisted trained , experienced primary brain tumour patients (veterans) who had previously completed initial treatment to meet with newly diagnosed brain tumour patients. The veteran patients participated in a training program with a psycho-oncology research clinician, then met with new patients for approximately one hour to answer general questions, provide support and offer information about other available supportive resources for patients and families. Supervision and support were provided to the 2 veterans throughout their meetings with 10 new patients. After the meetings, the new patients and veteran patients responded to questionnaires and exploratory interviews about the benefits and drawbacks of this type of support, resulting in quantitative and qualitative findings concerning the effectiveness of the intervention. There were multiple benefits for new patients and veteran patients alike, and no significant disadvantages for either group. Future directions for research and suggestions for modifications to the intervention are also discussed.

CP17

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Can expression of apoptotic proteins in glioblastoma serve as prognostic biomarkers?

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Introduction: MGMT promoter methylation is the only confirmed prognostic biomarker for GBM, so determining additional biomarkers is important. We are studying BNIP3 (Bcl-2 Nineteen kDa Interacting Protein), AIF (Apoptosis Inducing Factor), DR5 (Death Receptor 5), and MCL-1 (Myeloid Cell Leukemia Sequence 1). BNIP3 localization to the nucleus confers resistance to temozolomide and represses AIF and DR5 expression; both promote apoptosis at higher levels. In contrast, MCL-1 downregulation promotes apoptosis in cancer cells. We hypothesize GBM patients whose tumors show decreased MCL-1, increased AIF and DR5, and/or cytoplasmic BNIP3 expression will have an improved prognosis. Methods: Using the Manitoba GBM cohort (80 patients), BNIP3 subcellular localization was determined through immunofluorescence. MGMT promoter methylation was assessed using accepted protocols. Immunohistochemistry was performed on GBM FFPE sections using commercial antibodies and were scored for protein expression. Tumor scores were compared to progression free survival (PFS) and overall survival (OS). Results: There was a trend towards poor outcomes with nuclear BNIP3 sub-cellular localization; however, statistical significance was not reached. However, MCL-1 expression did not correlate with patient prognosis. Assessment of AIF and DR5 expression and patient outcomes is ongoing. Conclusions: BNIP3 localization to the nucleus may be a prognostic biomarker but this study will have to be extended to other GBM patient cohorts. Based on our study, MCL-1 is unlikely to be a prognostic marker for GBM.

CP18

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An interesting case of neurofibromatosis type 2

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Neurofibromatosis (NF) is a genetic disorder of neural crest-derived cells that affect growth of neural tissues. It isdivided into three categories: (a) von Recklinghausen"s neurofibromatosis or