ment of Neurosurgery, University Hospital of Münster. Since 2013, we performed solely "awake-awake-awake" surgeries using the a_2-receptor agonist, dexmedetomidine, as sole anaesthetic drug. The aim of this study was to compare both techniques and evaluate the clinical use of dexmedetomidine in the setting of awake craniotomies for glioma surgery. MATERIAL AND METHODS: We retrospectively analysed patients that were operated in the Department of Neurosurgery, University Hospital of Muenster either under "asleep-awake-asleep" using propofol-remifentanil sedation, or under "awake-awake-awake" conditions, using dexmedetomidine infusions. In the,,asleep-awake-asleep"- group patients were intubated with laryngeal mask and extubated for the assessment period. Patients in the fully awake group were sedated with dexmedetomidine beyond the test phase. A scalp block was used in both conditions. We evaluated the electronical medical record and the digitalized anesthetic protocols from each patient. Adverse events, as well as applied drugs with doses and frequency of usage were recorded. Compliance was evaluated according to the surgeons' perception. RESULTS: Two-hundred twenty-four (n=224) awake surgeries were performed in the period from October 2009 till September 2015. One-hundred eighty (n=180) of these were performed for the resection of gliomas and included into the study. In the "awake-awake-awake"- group (n=75) significantly less opiates (p<0.000), less vasoactive (p<0.000) and antihypertensive (p<0.000) drugs were used in comparison to the "asleep-awake-asleep"- group (n=105). In addition, compliance was much higher rated in the "awake-awake-awake"-group. Furthermore, the overall length of stay (p<0.000) and the surgical time (p<0.000) was significantly lower in the "awake-awake-awake" group. CONCLUSIONS: Dexmedetomidine provides excellent setting for fully awake surgeries. Our experience shows that using dexmedetomidine as sole anaesthetic drug during awake craniotomies sedates moderately and acts anxiolytic. Thus, after ceasing infusion it enables quick and reliable clinical neurological assessment of patients. Furthermore, according to our experience, it reduces the length of hospital stay and duration of the whole surgical procedure.

P16.23 SURGICAL RESECTION OF MELANOMA BRAIN METASTASES, A HIGHLY EFFECTIVE MODALITY FOR LOCAL CONTROL IN THE ERA OF PROLONGED SURVIVAL FROM STAGE IV MELANOMA

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INTRODUCTION: Novel systemic therapies targeting the MAP kinase pathway (BRAF inhibitors) or immune checkpoints have significantly improved the overall survival of patients with metastatic melanoma, with a 2 year overall survival now above 50%. The importance of achieving durable local control of brain metastases is therefore reinforced. We sought to determine the local control rate after complete surgical resection of individual brain metastases in patients with stage IV melanoma. Secondary outcome measures were morbidity and mortality associated with these surgeries, frequency of distant recurrence of brain metastases, and overall survival. Additionally, we sought to define patterns of treatment in relation to radiation options and systemic therapies. METHODS: Clinicopathological data was retrospectively collected from 104 consecutive patients recorded in a prospective database who underwent surgical resection of 1 – 4 melanoma brain metastases between May 2008 and December 2014 at Melanoma Institute Australia and Royal Prince Alfred Hospital, Sydney Australia. Group 1 comprised all those treated between May 2008 and May 2011 (before the routine use of effective drug therapies). Group 2 comprised all those treated between June 2011 and December 2014. Given the marked heterogeneity between the treatment the two groups have received, we felt that statistical analyses for direct comparisons would be inappropriate. RESULTS: Group 1 had 46 patients with a total of 78 cerebral melanoma metastatic lesions resected and Group 2 had 58 patients with a total of 106 lesions resected. The local control rate at 24 months was 91% in both Group 1 and Group 2. The median overall survival was higher in Group 2 than Group 1, as reflected by 13.5 months and 11.5 months respectively. The use of whole brain radiation therapy, systemic therapy, stereotactic radiosurgery (SRS) to cavity varied between the two groups, with 72%, 35%, 0% in Group 1 and 57%, 34%, 10% in Group 2, respectively. The rates of SRS failure varied between the two groups, with 4% in Group 1 and 34% in Group 2. Peri-operative complications rates and death rate of 4% and 1% respectively was detected in Group 1, and 6% and 2% respectively in Group 2. CONCLUSION: Surgical resection of melanoma brain metastases is a highly effective and safe means of local control for stage IV melanoma patients who now see prolonged survival when treated in a multimodal way by a cohesive multidisciplinary group.

P16.25 SURGICAL RESECTION AND CELLULAR PROLIFERATION PREDICT PROGNOSIS FOR PAPILLARY GLIONEURONAL TUMOR

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OBJECT: The World Health Organization classifies papillary glioneuronal tumor (PGNT) as Grade I, however, several malignant cases have been reported. PGNT is a rare brain tumor that occurs in the white matter and affects young adults. The purpose of this study was to establish the clinical characteristics of this unfamiliar entity. METHODS: PubMed/NCBI was queried for patient-level reports of PGNT, resulting in 132 cases. Six additional cases treated at Brigham & Women's Hospital and Massachusetts General Hospital were assessed for a total of 138. A Kaplan-Meier and Cox regression analyses were conducted to determine predictors of progression-free survival (PFS). RESULTS: PGNT has a higher prevalence in males (1.4:1), and presents at age 27.1 ± 16.4 (SD). Presenting symptoms include headache (64%) and seizure (37.8%), with a mean duration of 13.3 months. Average radiological size is 4.3 cm. Common locations of occurrence were frontal (32.1%) and temporal (22.4%) lobes. Tumors were periventricular (48.2%, effacing), proximal to a ventricle (20%, <1.0 cm) and intraventricular (11.8%). They were commonly cystic/solid (39.8 percent). Tumors often demonstrated calcification (47.7%) and edema (45.5%). Enhancement on magnetic resonance imaging showed a heterogeneous (32%) or ring pattern (25.2%). The average Ki-67 index of proliferation was 3.6, with six cases greater than 10. Treatment included gross-total resection (GTR), subtotal resection (STR), and adjuvant radiation, chemotherapy or both. Five years post-treatment, PGNT had an 85.1 PFS rate (95% CI:75.2-91.2). In patients treated with surgery alone, PFS was higher after GTR compared to after STR (Mantel-Cox analysis, p<0.0001). Cox regression analysis demonstrated that recurrence is nearly 10 times more likely after STR than after GTR (p<0.001). A Ki-67 index less than 5 percent resulted in a greater PFS than an index greater than 5 percent (p<0.001). CONCLUSION: PGNT is a benign tumor, but can present atypically as high-grade. GTR is the most common treatment, and cases can warrant radiation and chemotherapy. Maximal surgical resection and cellular proliferation are prognostic indicators for PGNT. This study represents the most comprehensive clinical understanding of this rare tumor. More research is needed to evaluate the diverse presentation of PGNT.

P16.26 SURGICAL TREATMENT OF PINEAL REGION TUMORS

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OBJECTIVE: To analyse short-term results and assess long-term follow-up of patients with pineal region tumors which were operated in Uzhhorod Regional Centre of Neurosurgery and Neurology. METHODS: 24 patients with pineal region tumors were operated in Uzhhorod Regional Centre of Neurosurgery and Neurology since 2011. Male to female ratio was 1:1. Mean age of the patients was 25.2 years (10 were of paediatric age). Patients were divided into two groups according to tumor type: low-grade - 12 cases (meningioma - 3, pylocytic astrocytoma - 3, pineocytoma - 2, ependymoma - 1, choroid glioma - 1, papillary tumor - 1, xantogranulema - 1) and high-grade - 12 patients (pineoblastoma - 5, anaplastic astrocytoma - 2, glioblastoma -2, teratoma -1, germinoma - 1, choriocarcinoma - 1). The extent of resection was evaluated on early postoperative MRI. Short-term results were determined based on neurological examination one month after surgery in all patients. Long-term results were assessed based on overall survival in patients with high-grade tumors and Karnofsky Performance Scale (KPS) on last follow-up in patients with low-grade tumors. Mean follow up was 24 months (in low-grade group - 34 months). RESULTS: Gross total resection was achieved in 10 cases (41.7%) and in 6 patients near total resection was performed (25%). 4 patients underwent a subtotal resection of the tumor (16.7%) and in 4 cases only partial resection was done (16.7%). Majority of the patients (83.3%) were neurologically stable or improved compared to preoperative status on day 30 follow-up. 2 patients (8.3%) deteriorated after resection of the tumor. Postoperative mortality was 8.3% (large venous infarction and postoperative meningitis). All patients with high-grade tumors underwent radio- and chemotherapy after surgery according to tumor histology. Mean overall survival in this group of patients was 11.6 months. 7 out of 12 patients (58.3%) with low-grade pineal tumors underwent gross total resection. On last follow-up 10 patients (83.3%) with low-grade tumors were KPS 100 and 2 (16.7%) patients were KPS 70. CONCLUSIONS: Resection of pineal region tumors is safe (morbidity/mortality - 16.6%). In patients with high-grade pineal tumors surgical strategy should consist of simple debunking as overall survival is poor (11.6 months). Excellent long-term outcome (KPS 100 in 83.3%) in patients with low-grade tumors was achieved with aggressive surgical strategy (gross total resection in 58.3%).