Abstracts

P16.25 SURGICAL RESECTION AND CELLULAR PROLIFERATION PREDICT PROGNOSIS FOR PAPILLARY GLIONEURAL TUMOR A. Ahmed1, H. Y. Dawood2, J. Gerard3, J. R. Smith3. 1Warren Alpert Medical School of Brown University, Wakefield, RI, United States; 2Brigham & Women’s Hospital, Harvard Medical School, Boston, MA, United States.

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 familiar 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 years. 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 year overall survival was 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<0.001). Cox regression analysis demonstrated that recurrence is nearly 10 times more likely after STR than after GTR (p<0.001). A Ki-67 index of less than 5 percent is statistically less 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. Maximizing surgical resection and radiological proliferative markers 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 A. Smolanka, T. Havryliv, V. Smolanka; Regional Centre of Neurosurgery and Neurology, Uzhhorod, Ukraine.

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 years of paediatric age). Patients were divided into two groups according to tumor type: low-grade - 12 cases (medulloblastoma - 3, pycyotic astrocytoma - 3, glioblastoma - 3, pineoblastoma - 3, pineocytoma - 3), high-grade - 12 patients (pineoblastoma - 5, anaplastic astrocytoma - 2, glioblastoma - 2, teratoma - 1, germinoma - 1, choroid plexus carcinoma - 1). The extent of resection was evaluated on early postoperative magnetic resonance imaging (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 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 debulking and as overall survival is limited (11.6 months) Early aggressive resection (KPS 100 in 83.3%) in patients with low-grade tumors was achieved with aggressive surgical strategy (gross total resection in 58.3%).