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Cerebellar Low Grade Gliomas (CLGG) in children: surgical institutional experience

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Introduction: LGG are the more frequent cerebellar tumors in children. Surgical Removal, particularly Gross Total Resection (GTR) is the gold standard management.

Patients and Methods: Retrospective study including 67 patients with diagnose of CLGG treated at Hospital Sant Joan de Deu, Barcelona between 1980 and 2010.

Results: Of 67 cases, 36 were girls (53.7%). Mean age at diagnose 90 months (13.1 - 214 months), main symptoms were headache/vomiting and ataxia.

By neuroimaging, mean tumor size was 48 x 43mm; 8.1% were solid, 53.2% were solid plus cystic component and 38.7% had a mural. Hydrocephalus at onset was found in 49 cases (73%) but just 16 (23.9%) required permanent CSF Shunt.

Histology reported 30 pilocytic Astrocytomas, 28 LGG "nos" and 6 Fibrillary Astrocytomas. Tumor removal was indicated in 65 cases (97%), achieveing 49 GTR and 16 Subtotal Resections (STR). Forty one patients (61%) had local complications resolved satisfactorily, 27 had transient neurological deficits (40.3%) and 2 presented moderate to severe complications with long term sequels.

One case of GTR presented recurrence requiring a second tumor removal. Progression after STR was observed in 6 cases (9%), in which, Adjuvant therapy (AT) was prescribed obtaining stabilisation of residual tumors. Histology was not related with progression or recurrence. Two small tumors never required treatment.

At study closure, 51patients were alive with no evidence of tumor (76.1%), 43 (64.2%) were neurologically intact and 24 (35.8%) presented sequels. Mean follow up: 71.9 months. Mortality: 0.

Progression Free Survival (PFS): 164.6 months, Overall survival (OS): 100% at 3, 5, 10 and 15 years.

Conclusions: GTR is the gold standard treatment for patients with Cerebellar LGG, it was curative for 76% of our patients. Surgical morbidity associated with the extension of tumor removal was high but transient. In cases of tumor progression, AT was effective to control the disease.