

IMPACT OF LESIONECTOMY ON EPILEPTOGENIC LOW-GRADE TUMORS IN PEDIATRIC PATIENTS.

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Aim: Cerebral low-grade tumors represent a quite common finding in the first 2 decades of life. Seizures are the most common presenting symptom, with established epilepsy having a severe impact on quality of life (QoL) and performance. Lesionectomy (i.e. removal of the tumor with sparing of perilesional healthy tissue) is a relatively safe and effective procedure, usually granting satisfying post-operative control of epilepsy and QoL improvement, with low complication rates. Aim of this study was to disclose possible correlations between tumor location, AED's discontinuation and post-operative control of epilepsy in patients undergoing lesionectomy.

Methods: Twenty patients (aged from 4 to 17 years, mean age 11.2) were operated on in a 3-year time. Seizures were the presenting symptom in all subjects. Their occurrence was sporadic in 5 cases, monthly in 6, daily/weekly in 9. The time interval from first seizure occurrence to surgery ranged from 6 months to 7 years (median 2.8 yrs). Clinical, neuroradiological and neuropsychological evaluation was performed in all patients. Tumor distribution included 10 temporal, 4 frontal, 1 parietal, 1 occipital and 4 intraventricular or with massive intraventricular extension tumors. A slight predominance of left side lesions was observed (12:8).

Results: Complete removal was obtained in 15 patients, subtotal in 5. Histology evidenced 6 oligodendrogliomas, 3 pilocytic astrocytomas, 1 fibrillary astrocytoma, 1 astroblastoma, 1 subependymoma, 3 gangliogliomas, 1 gangliocytoma, 1 amartoma, 2 DNET and 1 teratoma. No major post-operative complications occurred. According to Engel's classification, 15 patients were completely seizure-free (Class 1A); rare disabling seizures (Class 1B) were observed in 5 patients. AED's regimen was discontinued in 10 patients, reduced in 5, unchanged in 5. Complete removal and temporal tumors reached the higher degree of seizures resolution, with AED's discontinued in 8 patients out of 10. Frontal tumors and intraventricular tumors had the worst results in the group of partial removal.

Conclusions: In our series lesionectomy proved to be effective in post-operative seizures control. Tumor location and extent of tumor removal seem to have a strict relationship with seizures occurrence. Best results were obtained by complete removal of temporal lobe lesions.