OP58

Brain tumors in children with refractory seizures – A long-term follow up study after epilepsy surgery

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Epilepsy-surgery is an established treatment option for refractory epilepsy. Brain tumours, besides dysplasias, vascular malformations and other lesions, can cause refractory epilepsy. Long-term epilepsy associated brain tumours, even though mostly benign, are neoplastic lesions and thus have to be considered as epileptic and oncological lesions.

We retrospectively analyzed epileptological and oncological follow up (FU) in pediatric patients who received brain surgery for refractory epilepsy and whose histology showed a tumour as underlying cause (n=107). We assessed epileptic as well as oncological outcome in long term FU (mean 119 months).

At last available outcome (lao) 82.2% were seizure free (ILAE class 1) and seizure outcome was stable over more than 14 years. 54% of the patients were without anti-epileptic drugs (AED) at lao. 96.2% of the tumours were classified WHO grade I and II, 3.7% were malignant (WHO grade III). Adjuvant treatment was administered in 5.7%. 2.9% had a relapse and one patient died (tumour related mortality= 1.4%). After operation 91% of the patients attended regular school/ university and/ or professional training. 40% had a normal psychosocially development before and after operation and 40% were catching up after operation.

This study shows that epileptological outcome within this special group is promising and stable and oncological outcome has a very good prognosis. However, oncological FU must not be dismissed as a small percentage of patients suffer from malignant tumours and adjuvant treatment, relapse and mortality have to be considered.