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Modern neurosurgical treatment of patients with symptomatic low grade glioma in eloquent areas

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Objective: Up to now, there has been no therapeutic standard for the heterogenic groups of low grade gliomas (LGG). Our tumor data bank demonstrates an incidence of 5-10% LGG among average 180 primary surgically treated brain tumors per year with an increasing tendency. In this manuscript, we describe our operative procedure and its results on patients with symptomatic LGG in critical brain area.

Methods: The analysis revealed 32 patients with LGG who were operated on in the last three years. Most patients had diffuse astrocytoma WHO grade 2 (17 patients). Rare tumors such as ganglioglioma (3), central neurocytoma (3) and subependymoma (1) were also diagnosed during this period. The tumor was mostly localized perisylvian (17) less in ventricle (5), brainstem (5), central region (4) or basal ganglia (1). All patients were operated on with navigation support, endoscopic-microsurgical technique and intraoperative neurophysiologic monitoring (IOM) of different modalities. The morphologic data was fused with the functional one (fMRI, DTI, nTMS as well as PET) for navigation setting.

Results: Total excision could be achieved in 14 patients. Subtotal (14) or part resection (4) has had to be performed due to the functional data and the IOM results. Temporary worsening of the neurological finding occurred in 11 patients for several days. The examination three months after surgery and later on demonstrates, however, an improvement status in comparison to that of before surgery in 26 patients. During this period, no recurrence surgery was needed. The seizures improve in 14/19 patients with or without antiepileptic drugs but in decreased dosage.

Conclusion: Our results show that LGG in critical area can be operated on safely with good outcome thus improvement of the quality of life. This therapeutic option using modern morphologic and functional data should be offered to patients with symptomatic LGG.

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Neurocysticercosis: A case report of a neglected cause of seizure in a child

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Neurocysticercosis is a significant but neglected cause of preventable seizure worldwide. This study aimed to report the case of a 9 year-old, Filipino, female who developed new-onset, right-sided seizures and hemiparalysis. Cranial CT scan revealed a non-calcified cystic mass with rim enhancement and surrounding edema at the left frontal lobe. This was confirmed by brain MRI with an additional finding of a scolex, which is pathognomonic for neurocysticercosis. The patient received albendazole for seven days with dexamethasone and was discharged with an anticonvulsant, levetiracetam, maintained for five months. Repeat MRI was normal after two months. The patient has been seizure-free for almost two years now. Neurocysticercosis is caused by the encysted larva of *Taenia solium* in the central nervous system. Despite being recognized as the most common cause of acquired epilepsy in literatures, there have only been few well-documented cases of neurocysticercosis in children. Clinical manifestations vary and depend on the cyst's location, number, stage, and the host immune response. Criteria for diagnosis include a combination of clinical, radiologic, serologic, histologic and epidemiologic parameters. Neuroimaging suggestive of a single, small, cystic lesion with ring enhancement should raise suspicion of neurocysticercosis. This case highlights the need to consider neurocysticercosis in endemic areas wherein a child presented with new-onset, nonfebrile seizure with focal characteristic. Management includes symptomatic therapy with the use of anticonvulsants and definitive therapy with the use of cysticidal drugs, in combination with corticosteroids or surgery, if indicated. Prevention should place emphasis on the improvement of hygiene and sanitation.

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