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A personal consecutive series of surgically treated 51 cases of insular WHO Grade II glioma: advances and limitations.

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Object Few experiences of insular surgery have been reported. Moreover, there are no large surgical studies with long-term follow-up specifically dedicated to WHO Grade II gliomas involving the insula. In this paper, the author describes a personal consecutive series of 51 cases in which patients underwent surgery for an insular Grade II glioma. On the basis of the functional and oncological results, advances and limitations of this challenging surgery are discussed. **Methods** Fifty-one patients harboring an insular Grade II glioma (revealed by seizures in 50 cases) underwent surgery. Findings on preoperative neurological examination were normal in 45 patients (88%). All surgeries were conducted under cortico-subcortical stimulation, and in the case of 16 patients while awake. **Results** Despite an immediate postoperative worsening in 30 cases (59%), the condition of all but 2 patients (96%) returned to baseline or better. Postoperative MR imaging demonstrated that 77% of resections were total or subtotal. Ten patients underwent a second or third surgery, with no additional deficit. Forty-two patients (82%) are alive with a median follow-up of 4 years. **Conclusions** This is the largest reported experience with insular Grade II glioma surgery. The better knowledge of the insular pathophysiology and the use of intraoperative functional mapping allow the risk of permanent deficit to be minimized (and even enable improvement in quality of life) while increasing the extent of resection and thus the impact on the course of the disease. Therefore, surgical removal must always be considered for insular Grade II glioma. However, this surgery remains challenging, especially within the anterior perforating substance and the posterior part of the (dominant) insula. Additional surgery can be suggested in cases in which the first resection is not complete.

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