ABSTRACT

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Transsylvian Insular Glioma Surgery: New Classification System, Clinical Outcome in a Consecutive Series of 79 Cases.

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BACKGROUND: Surgery of insular glial tumors remains a challenge because of high incidence of postoperative neurological deterioration and the complex anatomy of the insular region.
OBJECTIVE: To explore the prognostic role of our and Berger-Sanai classifications on the extent of resection (EOR) and clinical outcome.
METHODS: From 2012 to 2017, a transsylvian removal of insular glial tumors was performed in 79 patients. The EOR was assessed depending on magnetic resonance imaging scans performed in the first 48 h after surgery.
RESULTS: The EOR ≥90% was achieved in 30 (38%) cases and <90% in 49 (62.0%) cases. In the early postoperative period, the new neurological deficit was observed in 31 (39.2%) patients, and in 5 patients (6.3%), it persisted up to 3 mo.We proposed a classification of insular gliomas based on its volumetric and anatomical characteristics. A statistically significant differences were found between proposed classes in tumor volume before and after surgery ($P < .001$), EOR ($P = .02$), rate of epileptic seizures before the surgical treatment ($P = .04$), and the incidence of persistent postoperative complications ($P = .03$).In the logistic regression model, tumor location in zone II (Berger-Sanai classification) was the predictor significantly related to less likely EOR of ≥90% and the maximum rate of residual tumor detection ($P = .02$).
CONCLUSION: The proposed classification of the insular gliomas was an independent predictor of the EOR and persistent postoperative neurological deficit. According to Berger-Sanai classification, zone II was a predictor of less EOR through the transsylvian approach.

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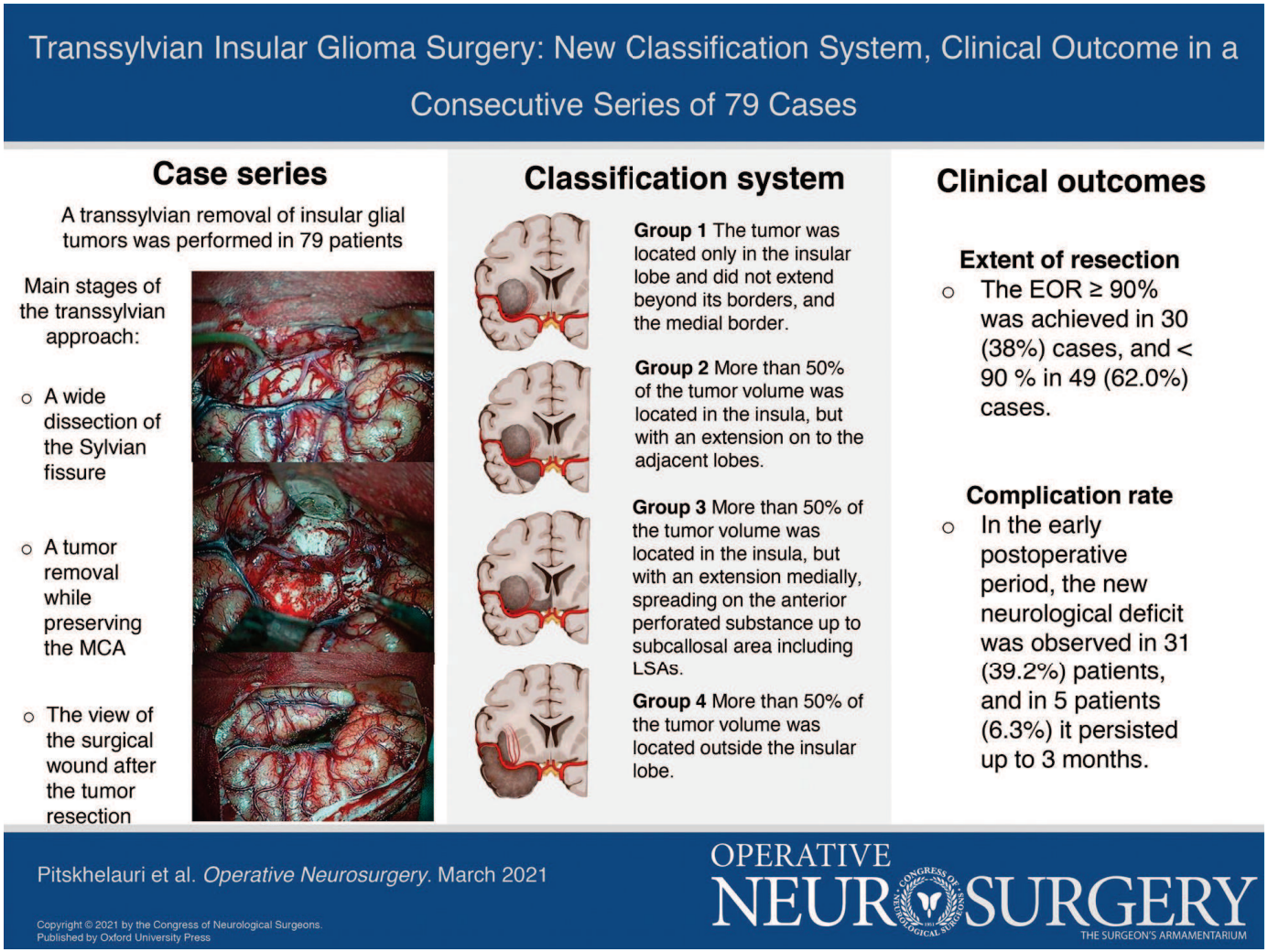
Graphical Abstract



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