Insular tumor surgery outcome

Insular tumor surgery carries substantial complication rates. However, surprisingly similar figures have been reported in large unselected craniotomy series and also after alternative treatment regimens. In view of the oncological benefits of resective surgery, data would therefore argue for microsurgery as the primary treatment for most patients with a presumed WHO Grade I-III tumor. Patients with glioblastomas and/or age > 60 years require a more cautious approach [1].

The success of resection of the insular lesion depends on the microneurosurgeon's skills, the microanatomic knowledge of this area, medical technology, and equipment used [2] [3] [4].

Although a number of studies have shown that greater extent of resection improves overall patient survival, few studies have documented postoperative seizure control after insular tumor resection.

Case series

2017

One-hundred nine patients with sufficient clinical data were included in a study of the Department of Neurological Surgery, University of California, San Francisco. At 1 yr after surgery, 74 patients (68%) were seizure free. At final follow-up, 42 patients (39%) were seizure free. Median time to seizure recurrence was 46 mo (95% confidence interval 31-65 mo). Multivariate Cox regression analysis revealed that greater extent of resection (hazard ratio = 0.2899 [0.1129, 0.7973], P = .0127) was a significant predictor of seizure freedom. Of patients who had seizure recurrence and tumor progression, seizure usually recurred within 3 mo prior to tumor progression. Repeat resection offered additional seizure control, as 8 of the 22 patients with recurrent seizures became seizure free after reoperation.

Maximizing the extent of resection in insular gliomas portends greater seizure freedom after surgery. Seizure recurrence is associated with tumor progression, and repeat operation can provide additional seizure control [5].

2010

One hundred fifteen procedures involving 104 patients with insular gliomas were identified. Patients presented with low-grade gliomas (LGGs) in 70 cases (60%) and high-grade gliomas (HGGs) in 45 (40%). Zone I (anterior-superior) was the most common site within the insula (40 patients [39%]), followed by Zone I+IV (anterior-superior + anterior-inferior; 26 patients [25%]). The median EOR was 82% (range 31-100%) for low-grade lesions and 81% (range 47-100%) for high-grade lesions. Zone I was associated with the highest median EOR (86%), and among all lesion grades, the insular quadrant anatomy was predictive of the EOR (p = 0.0313). Overall, there were 16 deaths (15%) during a median follow-up of 4.2 years. There were no surgery-related deaths, and new, permanent postoperative deficits were noted in 6 patients (6%). Among LGGs, tumor progression and malignant transformation were identified in 20 (29%) and 14 cases (20%), respectively. Among HGGs, progression was identified in 16 cases (36%). Patients with LGGs resected >or= 90% had a 5-year overall survival (OS) rate of 100%, whereas those with lesions resected < 90% had a 5-year OS rate of 84%. Patients with HGGs resected >or= 90% had a 2-year OS rate of 91%; when the EOR was < 90%,

the 2-year OS rate was 75%. The EOR was predictive of OS both in cases of LGGs (hazard ratio [HR] 0.955, 95% CI 0.921-0.992, p = 0.017) and HGGs (HR 0.955, 95% CI 0.918-0.994, p = 0.024). Progression-free survival (PFS) was also predicted by the EOR in both LGGs (HR 0.973, 95% CI 0.948-0.998, p = 0.0414) and HGGs (HR 0.958, 95% CI 0.919-0.999, p = 0.0475). Interestingly, among patients with LGGs, malignant progression was also significantly associated with a lower EOR (HR 0.968, 95% CI 0.393-0.998, p = 0.0369) [6].

1)
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