

Parasagittal meningioma case series

2023

A total of 212 parasagittal meningioma patients were included in this study. The incidence of perioperative complications was 23.6% (50/212), and perioperative death occurred in 6 (2.8%) patients. In univariate and multivariate logistic regression analyses of perioperative complications, peritumoral edema ≥ 1 cm (odds ratio [OR] 2.163, 95% confidence interval [CI] 1.057-4.428, $P = 0.035$) and the Sindou invasion Class V-VI (OR 0.018, 95% CI 1.248-11.064, $P = 0.018$) were independent predictors. After an average of 83 (39-154) months of clinical follow up among the living 206 patients, 22 (10.7%) patients showed tumor recurrence. In univariate and multivariate logistic regression analyses of tumor recurrence, the Sindou invasion Class III-IV (OR 5.539, 95%CI 1.469-20.884, $P = 0.011$) and the Sindou invasion Class V-VI (OR 9.144, 95%CI 2.215-37.757, $P = 0.002$) were independent predictors.

Conclusions: Peritumoral edema ≥ 1 cm and the Sindou invasion Class V-VI were the independent predictors of perioperative complications, and the Sindou invasion Class III-IV and the Sindou invasion Class V-VI were the independent predictors of tumor recurrence. The part of the parasagittal meningioma involving the sinus wall should be actively removed to the largest degree possible to reduce the recurrence rate ¹⁾

2020

A total of 131 parasagittal meningiomas (PM) (68.2%) were with WHO grade I, while WHO grade II and WHO grade III PMs constituted 40 (20.8%) and 21 cases (10.9%). Higher histological grade was associated with loss of trimethylation of H3K27 ($P = 0.000$). For WHO grade I PMs, GTR was significantly associated with a better PFS ($P = 0.023$); however, adjuvant radiotherapy did not benefit patients with STR ($P = 0.215$). For de novo high-grade (WHO grade II and III) PMs ($n = 37$), adjuvant radiotherapy was associated with a significantly longer OS ($P = 0.013$), while no difference was observed between GTR and STR ($P = 0.654$). In recurrent high-grade PM patients ($n = 24$), GTR combined with adjuvant radiotherapy increased PFS ($P = 0.005$).

This study demonstrated that PMs were a heterogeneous group of tumors with a high proportion of high-grade tumors that often displayed aggressive clinical behaviors. Low-grade PM benefited from radical resection, whereas high-grade de novo PM did not. Adjuvant radiotherapy significantly prolonged OS for high-grade primary PM, but did not impact the survival of patients with subtotally resected low-grade tumors. The long-term outcome of high-grade recurrent PMs was dismal. Hua et al. showed that the extent of tumor resection, tumor grade, and tumor recurrent status inform therapeutic decisions for PMs.

The radical resection of parasagittal meningiomas without complications and recurrences is the goal of the neurosurgeon. Nowadays, different managements are proposed ²⁾.

A study of Ricci et al. described the surgical technique during the lesional excision and the

[reconstruction](#) of the [superior sagittal sinus](#) (SSS).

The total removal (Simpson I and II) of parasagittal meningiomas (WHO grade I and II) was obtained in 75 patients from September 2000 to January 2010. The [indocyanine green videoangiography](#) was used before the [dural opening](#) and, when necessary, to identify and preserve the [cortical veins](#). The surgery of the SSS was performed in accordance with Sindou's classification, and its reconstruction was achieved through the use of a patch of galea capitis.

They had no cases of recurrence and thrombotic occlusion of the SSS in 5 years after the reconstruction. No complications were observed in 65 patients, and no cases of mortality were reported. Neurological focal deficits were observed in 5 patients. A [brain swelling](#) and a [venous infarction](#) were observed in 1 patient. Only one case of thrombotic occlusion was observed. A [cerebrospinal fluid leak](#) was observed in 2 patients, and a systemic [complication](#) was found in 1 patient.

Several factors contribute to the success of the parasagittal meningioma surgery. Ricci et al. considered the preservation of the [cortical veins](#) to be important, and, when possible, they recommended the [reconstruction](#) of the anterior third of the [superior sagittal sinus](#) (SSS). Their experience has led them to believe that until now surgery is a winning choice if practiced by expert hands ³⁾.

Analysis of the data obtained in 67 patients confirmed good outcome and long-term tumor control following a surgical strategy aimed to preserve venous outflow. These findings and the results of the authors' analysis of the literature emphasize that the goal of radical tumor resection should be balanced by an awareness of the increased surgical risk attendant on aggressive management of the SSS and [bridging veins](#) ⁴⁾.

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