Atypical Meningioma Recurrence meta-analysis

The overall postoperative recurrence rate of atypical meningioma was 38%. The subgroup analysis showed that the tumor recurrence rate of patients ≥60 years old and<60 years old was 51% and 40%, respectively, with no significant difference. The tumor recurrence rates in male and female patients were 42% and 44%, respectively, which showed no significant difference.The recurrence rates of the patients with parasagittal meningiomas,brain tissue infiltration,Ki-67>8%,mitotic count ≥6/10 high-power fields,and tissue necrosis were 52%,47%,63%,53%,and 69%,respectively.The recurrence rate after subtotal tumor resection was as high as 58%, and the patients who received radiotherapy had a higher tumor recurrence rate than those who did not receive radiotherapy (38% vs.29%, P=0.007). The current evidence demonstrates that atypical meningioma has a high recurrence rate after surgery. It is essential to pay more attention and take corresponding measures to improve the tumor-free survival rate of the patients [1)].

Kim et al. performed a retrospective cohort study and meta-analysis. Brain invasion, mitotic index, spontaneous necrosis, sheeting, prominent nucleoli, high cellularity, and small cells were the histopathological features of interest. The data from 25 studies involving 3590 patients including our cohort (n = 262) were included. The pooled HR of mitotic index at a cutoff value of 4 showed no statical significance in the gross analysis (pooled HR, 1.09; 95% CI 0.61-1.96; p = 0.7699). Furthermore, it failed to prognosticate PFS in other pooled analyses. For brain invasion, no consistent association with the progression was found in each pooled analysis according to the included studies. Among the remaining five atypical features, spontaneous necrosis, sheeting, and prominent nucleoli showed a significant correlation with PFS in the gross analysis. In the analysis that pooled the HRs from the multivariate analyses, only spontaneous necrosis had significant association with PFS. The available evidence supports that the current cutoff value of mitotic index for diagnosing atypical meningioma might be improper to have prognostic value. The prognostic significance of brain invasion also needs further evaluation [2)].

Regardless of whether GTR or STR was performed, postoperative RT improved PFS and OS to varying degrees. Especially for patients undergoing Simpson grade III or IV resection, postoperative RT confers the benefits for recurrence and survival [3)]

1)
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2)
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3)
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