Stereotactic radiosurgery for central neurocytoma

The aim of a multicenter, retrospective cohort study was to evaluate the outcomes of stereotactic radiosurgery for central neurocytoma treatment and identify predictive factors.

Hung et al. retrospectively analyzed a cohort of patients with CNs treated with SRS at 10 centers between 1994 and 2018. Tumor recurrences were classified as local or distant. Adverse radiation effects (AREs) and the need for a CSF shunt were also evaluated.

The study cohort comprised 60 patients (median age 30 years), 92% of whom had undergone prior resection or biopsy and 8% received their diagnosis based on imaging alone. The median tumor volume and margin doses were 5.9 cm3 and 13 Gy, respectively. After a median clinical follow-up of 61 months, post-SRS tumor recurrence occurred in 8 patients (13%). The 5- and 10-year local tumor control rates were 93% and 87%, respectively. The 5- and 10-year progression-free survival rates were 89% and 80%, respectively. AREs were observed in 4 patients (7%), but only 1 was symptomatic (2%). Two patients underwent post-SRS tumor resection (3%). Prior radiotherapy was a predictor of distant tumor recurrence ($p = 0.044$). Larger tumor volume was associated with pre-SRS shunt surgery ($p = 0.022$).

Treatment of appropriately selected CNs with SRS achieves good tumor control rates with a reasonable complication profile. Distant tumor recurrence and dissemination were observed in a small proportion of patients, which underscores the importance of close post-SRS surveillance of CN patients. Patients with larger CNs are more likely to require shunt surgery before SRS [1)].

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Hung YC, Lee CC, Yang HC, Mohammed N, Kearns KN, Sun SB, Mathieu D, Touchette CJ, Atik AF, Grills IS, Squires B, Ding D, Williams BJ, Yusuf MB, Woo SY, Liscak R, Hanuska J, Shiao JC, Kondziolka D, Lunsford LD, Xu Z, Sheehan JP. Stereotactic radiosurgery for central neurocytomas: an international multicenter retrospective cohort study. J Neurosurg. 2020 Apr 3:1-10. doi: 10.3171/2020.1.JNS191515. [Epub ahead of print] PubMed PMID: 32244212.