

Recurrent pituitary neuroendocrine tumor

To define the efficacy and complications of multisession Gamma Knife radiosurgery (MGKRS) delivered in three consecutive sessions for the treatment of residual or recurrent pituitary neuroendocrine tumors (PAs).

METHODS: This was a retrospective study of data from the Neurosurgery and Gamma Knife Radiosurgery Department at San Raffaele Hospital between May 2008 and September 2017. We recruited 47 consecutive patients undergoing MGKRS in three consecutive fractions for residual or recurrent PA with a distance from the anterior optic pathway inferior to 2-3 mm.

RESULTS: Thirty-eight (80.8%) patients had a nonfunctioning-PA (NFPA) while 9 (19.2%) had a hormone-secreting PA (HSPA). Tumor control was achieved in 100% of patients. Tumor shrinkage was seen in 33 out of 44 (75.0%) patients with a radiological follow-up. Mean tumor volume before MGKRS was 3.93 cm³. The mean tumor volume at last follow-up was 2.11 cm³, with a mean tumor shrinkage of 50.2%, as compared with baseline. One case of suspected radiation-induced optic neuropathy (RION) was documented while new-onset hypopituitarism for any axis occurred in 12 of the 31 (38.7%) patients at risk. The mean follow-up was 44.6 ± 4.0 months (range, 6-111 months).

MGKRS is a valid alternative to external fractionated radiotherapy and other types of stereotactic radiosurgery for the treatment of PAs, achieving a high tumor control rate with a low risk of visual deterioration. Moreover, the majority of patients showed a significant reduction of tumor size in the long term ¹⁾.

¹⁾

Albano L, Losa M, Nadin F, Barzaghi LR, Parisi V, Del Vecchio A, Bolognesi A, Mortini P. Safety and efficacy of multisession gamma knife radiosurgery for residual or recurrent pituitary neuroendocrine tumors. *Endocrine*. 2019 Feb 23. doi: 10.1007/s12020-019-01876-2. [Epub ahead of print] PubMed PMID: 30798432.

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