Fractionated Stereotactic Radiotherapy for skull base meningioma

Case series

The purpose of a study was to assess the radiological change patterns in skull base meningiomas after conventionally fractionated stereotactic radiotherapy (CFSRT) to determine a simple and valid method to assess the tumor response.

Forty-one patients with a benign skull base meningioma treated by CFSRT from March 2007 to August 2015 were retrospectively evaluated. They measured tumor volume (TV), long-axis diameter (LD), and short-axis diameter (SD) on both pre-treatment images and follow-up images of 1, 3, and 5 years after CFSRT, respectively. The paired t-test was used to detect differences in the LD and SD change rates. Spearman's correlation coefficients were calculated to evaluate relationships between the TV and the diameters changes.

The number of available follow-up MRIs that were performed at 1, 3, and 5 years after the CFSRT was 41 (100%), 34 (83%), and 23 (56%), respectively. The change rates of SD were significantly higher than those of LD at every time point and more strongly correlated with the change rates of tumor volume at 3 and 5 years after CFSRT.

SD may be useful as a simple indicator of the tumor response for skull base meningioma after CFSRT [1)]

1)

Takehana K, Nakamura D, Abdelghaffar A, Uto M, Katagiri T, Arakawa Y, Mineharu Y, Miyamoto S, Mizowaki T. Short diameter may be a useful simple indicator of the tumor response in skull base meningiomas after conventionally fractionated stereotactic radiotherapy. Eur Radiol. 2021 Feb 10. doi: 10.1007/s00330-021-07707-1. Epub ahead of print. PMID: 33569622.