

CLINICAL PAPER /

BRAIN TUMOR



Stereotactic radiotherapy for the treatment of pituitary adenomas

Minim Invasive Neurosurg. 2006 Jun;49(3):150-5.

ABSTRACT

The aim of this study was to retrospectively review local control and morbidity following stereotactic radiotherapy (SRT) for pituitary adenoma.

Between 1997 and 2004, 39 patients with pituitary adenomas received SRT. Median age was 56 years (range: 13 to 90 years). Thirty-three patients underwent incomplete transsphenoidal surgery prior to SRT and six had unresectable tumors. The largest tumor dimension varied from 1.7 to 6 cm (median: 3 cm). Tumor volume varied from 1.2 to 56 mL (median 10.5 mL). Thirty-five tumors were < or = 1 mm from the optic chiasm/nerve. Thirty-three tumors were non-functional. SRT was delivered by a dedicated linear accelerator (Novalis, Heimstetten, Germany). Beam collimation was achieved by a fixed circular collimator (five patients) or a micro-multileaf collimator (34 patients). Total dose varied from 4500 to 5040 cGy (median: 4860 cGy) and was prescribed at the 90 % isodose line.

SUMMARY

After a median follow-up of 32 months (range: 12 to 94 months), the local control rate was 100 %. Tumor size was stable in 26 patients and decreased in 13 patients. Hormone normalization did not occur following SRT. New endocrine deficiency occurred in six patients. No patient developed cranial nerve injury or second malignancy following treatment.

CONCLUSION

SRT achieves a high rate of local control and a low rate of treatment-induced morbidity. SRT is applicable to pituitary adenomas in close proximity to the optic apparatus and tumors in excess of three centimeters in the greatest dimension. Further follow-up is necessary to establish the long-term outcome following SRT for pituitary adenomas.