

Long-term Follow-up of Gamma Knife treatment in Acromegaly: Endocrinological Results and Adverse Effects Dejan Jakimovski MD; Hans Clusmann; Beate Huffmann Neurosurgery department, RWTH Aachen University, Germany

Introduction

Primary treatment to achieve cure of acromegaly is surgery and medical therapy. An adjunct option for unresponsive cases is Gamma knife radiosurgery. Our aim was to evaluate its results and adverse effects during a long-term follow-up.



All patients treated for acromegaly during the period 1999-2011, which had follow-up longer than two years, were included in the study. We evaluated the cure rate and radiation adverse effects as well as the time span of their occurrence. Cure was defined as an age-adapted normalization of the IGF-1 level, with or without medication therapy.

Methods



Results

Our series included 25 patients with a median follow-up of 114 months after Gamma knife treatment. The mean tumor volume was 1.58 ccm (0.3-9.9ccm) irradiated with median margin dose of 25 Gy. All patients but one (N=24) had been treated surgically before irradiation. None of these was solely cured by surgery. Overall cure after radiosurgery was achieved in 18 patients (72%), with and without medication in nine patients each. New pituitary deficiency occurred in 7 patients (24%) in a median interval of 6 years (1-7 years). We did not observe new visual or other cranial nerve deficits.





Conclusions

Gamma knife radiosurgery is a useful option in surgically or medically uncontrollable GH-secreting adenomas, leading to a promising cure rate of acromegaly. However, there is a 24% rate of a possible pituitary deficiency occurring years after irradiation. Therefore, long-term follow-up is a prerequisite for evaluation of the treatment benefit.