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HYPOFRACTIONATED STEREOTACTIC RADIOTHERAPY FOR ORBITAL METASTASES: FEASIBILITY, EARLY OUTCOMES, AND PALLIATIVE EFFECTS

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Introduction:

Orbital metastases are relatively uncommon, usually resulting from primary breast cancer (36.3%). Patients often suffer with proptosis, relative afferent pupillary defect and diplopia of the affected eye, leading to pain and reduced quality of life. Treatment of orbital metastases include surgical resection, radiotherapy or chemotherapy, depending on patient condition.

Material and Methods

Eleven patients were initially indicated for stereotactic radiotherapy (SRT) for orbital metastases (median age 58 years; 2 men, 9 women), with primary tumors from the breast, lung, melanoma, and kidney. Stereotactic treatments were performed using linear accelerator Varian EDGE and CyberKnife. One patient underwent surgical resection, and two were excluded due to rapid intracranial progression before simulation. Eight patients received SRT, with a median GTV volume of 14.17 cc (range 1.59–43.7 cc). Treatment was delivered in 1–10 fractions, most commonly 25–30 Gy in 5 fractions (2), including single-session radiosurgery (31.25 Gy/1 fraction) and 30 Gy/10 fractions. Two patients have not yet reached the first 3-month follow-up MRI.

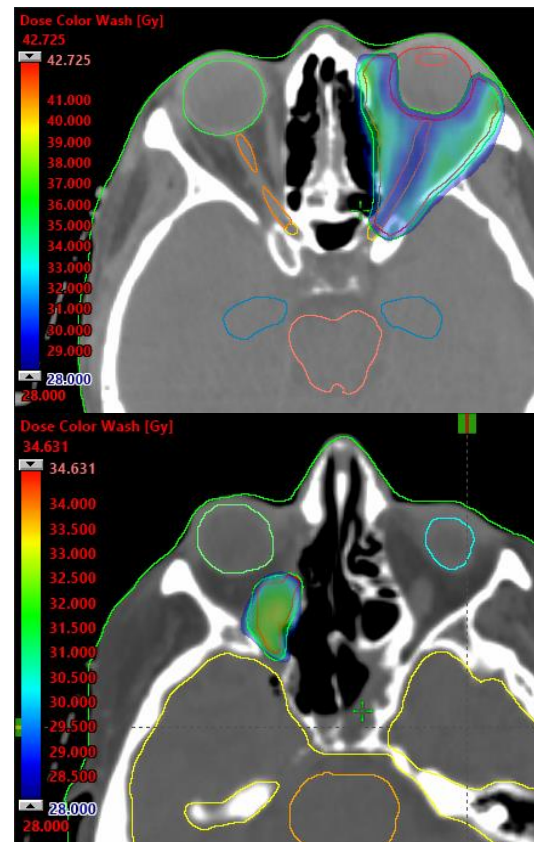


Figure 1. Dose distribution for two representative patients

Results

Radiologic response was evaluable in six patients. Among evaluable patients, partial response (PR) was observed in five, and complete response (CR) in one patient. Edema reduction and significant clinical improvement were noted in all patients, including reductions in proptosis, diplopia, and patients reported an overall better subjective well-being. One patient had lost vision prior to treatment, which did not recover afterward. No high-grade toxicity (CTCAE ≥ 3) was observed.

Conclusions

Orbital metastases pose a problem due to late diagnosis, significant symptoms that affect quality of life, and limited local treatment options. However, modern radiotherapy allows for rapid, precise, and safe treatment. Stereotactic radiotherapy offers an effective approach to control local disease, alleviate symptoms, and preserve vision.

References

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