STEREOTACTIC ABLATIVE RE-IRRADIATION FOR RECURRENT CHOROIDAL MELANOMAS AFTER PLAQUE BRACHYTHERAPY

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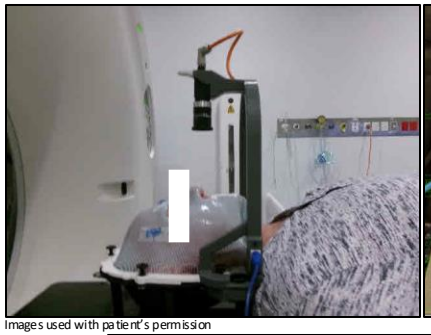
Background:
- Stereotactic linear accelerator-based radiotherapy (SRT) is used for choroidal melanomas, with high local control rates and similar toxicities compared to brachytherapy and enucleation.
- In the setting of progressive recurrent disease, options for salvage include enucleation with loss of the eye.
- There is limited evidence in the setting of previously irradiated choroidal melanomas with local recurrence in using stereotactic re-irradiation to preserve the eye.
- We assessed our series of re-irradiation of choroidal melanomas using SRT.

Methods:
- Retrospective case review of all patients treated with SRT for locally recurrent choroidal melanomas from 2010 to 2025.
- Measures included baseline ophthalmological and ultrasound findings, previous brachytherapy/external beam radiotherapy details, dose delivered to tumour and OARs
- Outcomes - Local and distant failure, and toxicity outcomes.

Results:
- 4 patients met selection criteria.
- Previous plaque brachytherapy treatment involved Ruthenium-106 in 3 patients and Iodine-125 in 1 patient.
- All patients had been treated with 85 Gy to the apex of the melanoma.
- Time from plaque brachytherapy to local recurrence ranged from 15 months to 9 years.
- Tumour thickness at recurrence ranged from 3.2 to 4.1mm, and diameter was measured between 6 and 15mm.
- All patients were treated with eye fix immobilization using 50 Gy in 5 fractions, delivered every other day.
- Last follow-up after completion of reirradiation ranged from 1.5 to 2 years.
- All patients had regression of their tumour and preservation of their eye, and none had evidence of distant progression.
- 1 patient developed retinopathy and was managed conservatively.

Conclusion:
- Reirradiation of recurrent choroidal melanomas using SRT appears feasible, resulting in tumour regression, and appears to be safe.
- This allows for preservation of the eye with no added toxicity effects at short term follow-up of 1.5-2 years.



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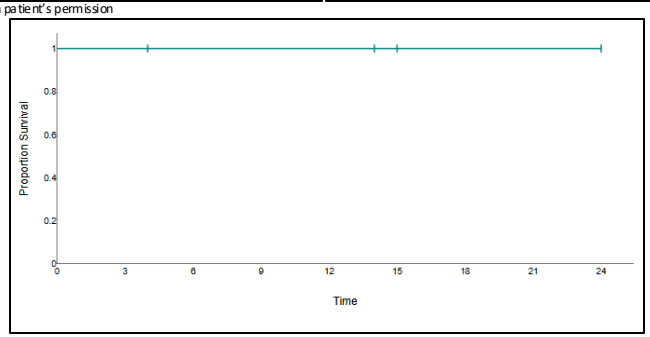

Pt	PTV mean (Gy)	Ipsi optic nerve dose (Gy)	Ipsi lens dose (Gy)	Contra eye dose (Gy)	Proximity to disc vs. initial (mm)
1	55.274	48.208	2.771	0.493	0 / 1
2	54.982	50.815	3.949	0.578	0 / 0
3	55.091	49.431	2.047	0.245	0 / 1
4	54.905	45.636	6.695	0.426	0 / 3

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