Local Failure after Episcleral Brachytherapy for Posterior Uveal Melanoma: Patterns, Risk Factors and Management.

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Purpose: To evaluate the patterns, the risk factors and the management of recurrence following brachytherapy in patients with posterior uveal melanoma.

Method: A retrospective cohort study of 374 consecutive patients (375 eyes) treated with episcleral brachytherapy for posterior uveal melanoma from January 2004 to December 2014. Exclusion criteria included inadequate follow-up (< 1 year) and previous radiation therapy. Local control rate and time to recurrence were the primary end points. Kaplan-Meier estimation and Cox proportional hazard models were conducted to identify risk factors associated with recurrence. The patterns of recurrence (chronologic and anatomic) and their management were also assessed.

Results: 21 patients (5.6%) experienced recurrence (follow-up range: 12 to 156 months, median 47 months). The median time to recurrence was 18 months (range: 4 to 156 months). Five-year estimated local recurrence rate was 6.6%. The majority (90.5%) of the recurrences occurred within the first 5 years. The predominant site of recurrence was at the tumor margin (12 patients, 57.1%). Univariate analysis identified 3 statistical significant recurrence risk factors: advanced age, largest basal diameter and the use of adjuvant transpupillary thermotherapy (TTT). Recurrent tumors were managed by repeat brachytherapy, TTT and enucleation.

Conclusion: Local recurrences following brachytherapy are uncommon 5 years after episcleral brachytherapy. Follow-up intervals can be adjusted to reflect time to recurrence. Most of the eyes with recurrent tumor can be salvaged by conservative methods.