Vitreoretinal Surgical Management of Small Choroidal Melanoma: 5-year outcomes in patients avoiding radiotherapy

Timothy Murray, M.D., M.B.A., FACS
Miami, FL
Aaron S. Gold, OD

Purpose:
To report the extended followup of the first patients treated with MIVS, endolaser tumor ablation, intravitreal triamcinolone acetonide and GEP analysis previously reported at the Retina Society (Paris 2015). This study presents the minimum 5-year followup of the first 100 patients treated with this radiation sparing surgical approach including GEP analysis. This is the largest cohort with extended followup in the treatment of small choroidal melanoma.

Methods:
IRB approved, retrospective analysis of the 100 initially reported patient consecutive case series of patients, thirty four had small choroidal melanoma undergoing targeted surgical ablation via MIVS with fine needle aspiration biopsy (FNAB) for molecular analysis. All patients were treated with 23/25 gauge MIVS, membrane peeling, endolaser tumor ablation, 25 gauge multipass FNAB, and intravitreal steroid. Patients were followed to 5 years at a followup interval of no more than 6 months. Each followup visit ascertained melanoma tumor status, VA, and tumor status. Patients with active visual compromising retinopathy were treated with anti-VEGF and/or triamcinolone acetonide. GEP analysis was conducted on all tumor biopsy samples. Systemic status was focused on metastatic disease development.

Results:
Thirty-four patients with small choroidal melanoma were treated within the initial 100 patient cohort reported in 2015 (Retina Society, Paris). These 34 patients all completed a minimum of 5-years of followup. Mean age at initial study entry was 59 years. Mean followup was 79 months (range 72 months to 96 months). Entry VA was 20/80, at 2 years was 20/30 and at 5 years was 20/40 (range 20/20 - 20/400). GEP analysis revealed 12 class 1b eyes 12/34, 35%) and 2 class 2 eyes (2/34, 6%). Three tumor/treatment related events were significant with 1 patient developing retinal detachment (1/34, 3%), 4 patients developed epiretinal membrane (7%), and 14 patients developed macular edema (14/34, 41%). Within this series, no patients developed metastatic disease.

Conclusions:
Small choroidal melanoma treatment is controversial. This surgical series reports long-term followup documenting tumor control over a 5-year window, supporting an acceptably low surgical complication rate, an absence of metastatic disease, an avoidance of radiotherapy/enucleation, and maintenance of functional visual acuity. This series supports an alternative surgical approach to the management of small choroidal melanoma.