Ruthenium-106 Brachytherapy in the Treatment of Circumscribed Choroidal Hemangioma

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Purpose: To examine the efficacy and safety of Ruthenium-106 plaque radiotherapy in the treatment of circumscribed choroidal hemangioma.

Methods: Twenty-one eyes of twenty-one patients diagnosed with symptomatic circumscribed choroidal hemangioma who underwent Ruthenium-106 plaque radiotherapy were included in the study. Clinical response, ancillary tests findings improvement, and major side effects were evaluated.

Results: From the initial to the one-year follow-up visits, vision improved in 12 eyes (57.1%), was stable in 7 eyes (33.3%), and became worse in 2 eyes (9.5%). Based on fluorescein angiography and optical coherence tomography, subretinal fluid and cystoid macular edema resolved in all patients. Changes in LogMAR visual acuity (P = 0.038); tumor thickness (P = 0.0001) and largest diameter (P = 0.007) on ultrasonography; and subfoveal thickness on optical coherence tomography (P <0.0001) were statistically significant between the initial and the one-year follow-up visits. Side effects as observed during the follow-up period included: radiation-related retinopathy in 5 (23.8%) eyes, radiation-related papillopathy in 1 (4.76%) eye, and subretinal fibrosis in 2 (9.5%) eyes. Subretinal fibrosis was the only permanent radiation-related side effect.

Conclusion: Ruthenium-106 plaque radiotherapy is an effective method of treatment for symptomatic circumscribed choroidal hemangiomas, with a low associated rate of permanent radiation-related side effects.