Tumors. The common risk factors in the development of RR are melanoma, retinoblastoma, choroidal metastasis and orbital following external beam radiation, plaque brachytherapy of choroidal retinopathy (RR) is one of the expected, common complications radiation keratitis, iris neovascularisation, cataract, radiation optic neuropathy, vitreous hemorrhage. Histopathologically in RR, there is damage to the retinal vascular endothelium with relative sparing of the pericytes, and infarcts. Proliferative radiation retinopathy has above findings microaneurysms, telengiectasia, retinal hemorrhages, hard exudates treatment, but can occur even after 10 to 15 years of radiation 65 Gy. RR occurs at a mean interval of 26 months following plaque brachytherapy [8]. Focal argon laser photocoagulation regresses the radiation induced vasculopathy and pan retinal laser photocoagulation prevents radiation induced neovascular glaucoma. Intravitreal anti-vascular endothelial growth factor (VEGF) agents decrease the vascular permeability and inhibit the formation of abnormal new vessels. Anti-VEGF therapy involves continuous intravitreal injections in 1 to 3 month intervals with dosages of 1.25 mg/0.05 mL, 2.0 mg/0.08 mL of bevacizumab and/or of 0.5 mg/0.05 mL or 2.0 mg/0.05 mL of ranibizumab. They are useful to suppress radiation-induced neovascular glaucoma, radiation maculopathy, and optic neuropathy. Frequent intravitreal anti-VEGF injections resolved the retinal/macular edema, regressed the retina/choroidal neovascularization. Studies have reported a short term, temporary improvement in the vision and changes in the retina/macular architecture on optical coherence tomography with anti-VEGF agents [9]. Pars plana vitrectomy with silicone oil injection can form a shield to prevent injury to the normal ocular structures at the time of placement of plaque brachytherapy [10].

Radiation retinopathy continues to be leading cause of vision loss following radiation brachytherapy of choroidal melanoma. Timely intervention with frequent intravitreal injections prevents the progression of RR with preservation of the vision. Advanced and new radiation techniques in future might reduce the incidence of radiation retinopathy. Additionally studies are required on the safety, tolerability and efficacy of the anti-VEGF agents to prevent long-term complications of radiation of retinopathy.

References


