

Proton for Ocular Melanoma Without a Dedicated Eye Beamline- The Clinical Aspect

Rashmi Kapur, MD –Retina Health Institute.

Using a 3-dimensional planning process without a dedicated proton eye beam line, approximately 300 patients have been treated with ocular melanoma in concert with the proton center at Northwestern. The process involves initial MRI scan of the orbits for tumor localization. Based on the MRI and fundus photos, a clip map is created by the physicist and the radiation oncologist. According to this map, tantalum clips are placed as fiducials for positioning. The following week, simulation is typically done in seated position, using a vertical CT scan; the gaze angle is set at the time of simulation, based on the tumor location. MRI is fused with the planning CT scan. The plan is generated using 3 beam angles, designed to avoid critical structures, with a dose of 50 Gy(RBE) in 5 fractions. This plan is reviewed with the physicist, radiation oncologist, and ocular oncologist.

Over the past 10 years, we have treated more than 300 patients with median follow-up of 4 years. Tumor recurrence has been rare (possibly 1 patient) and only 3 patients have required enucleation because of tumor recurrence or side effects of treatment.