Aim/Background: With multi-modality treatment, the cure rates of retinoblastoma have increased and the focus has shifted now to eye preservation with adequate visual functions. Inconsistent data exist on long-term visual outcomes and the factors predicting visual acuity. No studies have been reported on role of ocular coherence tomography (OCT) in predicting visual acuity. We report the visual outcomes and OCT of retinoblastoma survivors.

Methods: We assessed the visual acuity, color vision, and contrast sensitivity in patients treated at our center with chemoreduction, focal therapies and radiotherapy, in whom the affected eyes could be preserved. The patients who had completed 2 years follow-up duration after treatment completion and were more than 5 years of age at assessment were included. Clinical data was obtained from the database and factors associated with visual acuity were analyzed. An attempt was made to perform OCT in these patients to assess the retina and central macular thickness (CMT) was recorded.

Results: Visual outcomes were assessed in 45 eyes of 43 patients, of which 38 (88%) had bilateral retinoblastoma and at least 1 of the eyes could be preserved. The median age at diagnosis was 12 months. Sixty percent (27/45) had International classification of retinoblastoma group C or D disease with 40% eyes showing macular lesions. The far visual acuity was better than 6/12 in 53% (24/45), 6/12 to 6/60 in 40% (18/45) and 6/60 in 7% (6/60). Macular location and International classification of retinoblastoma showed a trend towards association with poor vision (p = 0.06 and 0.07, respectively). The color vision and contrast sensitivity were normal in all eyes. The median CMT recorded in OCT was 232 µm. Thinning of fovea was observed in 3 of 36 eyes (8%) and 1 eye showed epiretinal membrane. Radiotherapy was associated with foveal thinning (p = 0.003). Two of 3 eyes with foveal thinning had a vision of 6/60.

Conclusions: Good visual outcomes were observed in retinoblastoma patients treated with eye preservation. Macular location and International classification of retinoblastoma group may predict poor visual acuity. Foveal thinning assessed by OCT was significantly associated with poor vision.

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