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Effect of trabeculectomy on retinal nerve fiber layer and macular thickness by optical coherence tomography

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Purpose: To assess the change in thickness of retinal nerve fiber layer and macula, after trabeculectomy, by using optical coherence tomography.

Materials & Methods: A total of 25 patients with primary open angle glaucoma undergoing trabeculectomy were selected. Average and quadrant RNFL thickness, macular thicknesses were measured by OCT within a month before surgery and 1 and 3 months post-operatively. Main outcome measures were changes in average and quadrant RNFL, macular thickness with respect to post-operative intraocular pressure change.

Results: Average and quadrant RNFL thickness increases post-operatively after reduction of IOP from 28.12 ± 7.92 mmHg (mean \pm SD) to 11.40 ± 2.71 mmHg at 1 month and 11.68 ± 2.61 mmHg ($P < 0.0001$) at 3 months. A significant increase was observed in superior (18.33 ± 5.55 μ m, $P = 0.0085$) and inferior (16.04 ± 6.54 μ m, $P = 0.0178$) RNFL thickness at 3 months post-operatively. Average (10.89 ± 5.55 μ m, $P = 0.0555$), nasal (13.12 ± 8.16 μ m, $P = 0.1146$) and temporal (1.64 ± 3.17 μ m, $P = 0.6069$) RNFL thickness increase were not statistically significant ($P > 0.05$). Macular thickness increases from 229.82 ± 9.99 μ m pre-operatively to 243.88 ± 8.89 μ m at 1 month and 233.52 ± 7.95 μ m at 3 months ($P = 0.1547$) post-operatively, both were not significant.

Conclusion: A significant increase in superior and inferior RNFL thickness was observed due to reduction of IOP after trabeculectomy.

Biography

Ashraful Huq Ridoy is now working as Junior Consultant at Bangladesh Eye Hospital Ltd. He has completed basic Medical degree MBBS in 2007 and accomplished FCPS (Fellow of College of Physicians and Surgeons, Bangladesh) in Ophthalmology in 2015; as well as he had 4 years Professional Training on Ophthalmology. He has completed Fellowship in Cataract Surgery. His working fields of interests are cataract, glaucoma and refractive surgery. He is the Life Member of Ophthalmological Society of Bangladesh and Executive Director of Bangladesh Eye Donation Society & Eye Bank.

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