

PROGRESSIVE CHANGES IN RETINAL NERVE FIBER LAYER THICKNESS IN GLAUCOMA SUSPECT EYES: 4-YEAR FOLLOW UP RESULTS

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Purpose: To determine the progressive changes of retinal nerve fiber layer (RNFL) in glaucoma suspect eyes, and to compare these changes in eyes that developed and did not develop glaucomatous visual field damage (VFD) during 4-year follow-up period. **Methods:** The study included 70 eyes of 39 glaucoma suspects patients. The RNFL thickness and optic nerve head (ONH) parameters were measured with spectral domain optical coherence tomography (SD-OCT). Two consecutive abnormal visual field (VF) tests were accepted as glaucomatous VF progression. RNFL progression was defined as loss of $\geq 10\%$ of RNFL in one of the mean, inferior and superior quadrants. The changes of RNFL (mean, 4 quadrants and 10 clock hours) and ONH parameters in eyes with and without VFD were compared by repeated measurements variance analysis. **Results:** During a mean 47.6 ± 1.8 -month follow-up; 11 (15.7%) eyes showed VFD, and 30 (43%) eyes showed RNFL progression, of which 6 (8.6%) eyes developed both VF and RNFL progression. The mean RNFL thickness decreased $10.7 \pm 4.4\%$ in eyes with VFD, and $6.5 \pm 6.0\%$ in eyes without VFD ($p < 0.05$). The fastest RNFL reduction was in the inferior quadrant and at 6.0 clock hours, RNFL decreased $17.4 \pm 12.7\%$ in eyes with VFD and $8.0 \pm 9.7\%$ in eyes without VFD ($p < 0.05$). ONH changes were not statistically significant. **Conclusions:** In glaucoma suspects, RNFL defects occur ahead of VFD. In early diagnosis of glaucomatous progression, following up RNFL thickness change primarily at the inferior quadrant and 6.0 clock hours appears to be useful. **Financial Disclosure:** No.