

Multiple Temporal Lamina Cribrosa Defects in Myopic Eyes with Glaucoma and Their Association with Visual Field Defects

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PURPOSE: To investigate characteristics of lamina cribrosa (LC) defects in myopic eyes with open-angle glaucoma (OAG) using spectral-domain (SD) optical coherence tomography (OCT) .

DESIGN: Cross-sectional study.

PARTICIPANTS: One hundred thirty-three eyes with OAG and 83 eyes without OAG, with axial length of 24 mm or more.

METHODS: Serial enhanced depth imaging SD OCT B-scans of the optic disc were acquired and reviewed for LC defects (diameter, $\geq 100 \mu\text{m}$) and large pores (diameter, 60-100 μm) . The numbers and locations of LC defects

MAIN OUTCOME MEASURES: Numbers and locations of LC defects and large pores.

RESULTS: In myopic eyes with and without OAG, the average numbers of LC defects were 3.8 and 0.8 and numbers of large pores were 1.9 and 1.6, respectively. In both groups, LC defects and large pores were located predominantly at the temporal periphery. Among eyes with OAG, the number of LC defects was relatively high in the eyes with greater optic disc tilt angle and worse mean deviation of the VF (both P

CONCLUSIONS: Myopic eyes with OAG exhibited LC defects and large pores at similar locations as those without OAG, but in greater numbers, suggesting that these focal alternations of the LC in myopic eyes may evolve into larger defects when glaucoma develops in the eye. The number of LC defects, which was related to the optic disc tilt angle, was associated significantly with glaucomatous VF defects in both severity and location. This suggests that myopia may influence glaucomatous VF defects through optic disc tilt by way of an increased number of LC defects at the temporal periphery.

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