

Peripapillary sclera exhibits a v-shaped configuration that is more pronounced in glaucoma eyes

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AIMS: To compare the shape of the anterior surface of the peripapillary sclera (PPS) between glaucoma and healthy subjects.

METHODS: 88 primary open angle glaucoma (POAG) , 98 primary angle closure glaucoma (PACG) and 372 age-matched and gender-matched healthy controls were recruited in this study. The optic nerve head of one randomly selected eye of each subject was imaged with spectral domain optical coherence tomography. The shape of the PPS was measured through an angle defined between a line parallel to the nasal anterior PPS boundary and one parallel to the temporal side. A negative value indicated that the PPS followed an inverted v-shaped configuration (peak pointing towards the vitreous) , whereas a positive value indicated that it followed a v-shaped configuration.

RESULTS: The mean PPS angle in normal controls ($4.56\pm 5.99^\circ$) was significantly smaller than that in POAG ($6.60\pm 6.37^\circ$, $p=0.011$) and PACG ($7.90\pm 6.87^\circ$, $p<0.001$).
CONCLUSIONS: The v-shaped configuration of the PPS was more pronounced in glaucoma eyes than in healthy eyes. This posterior bowing of the PPS may have an impact on the biomechanical environment of the optic nerve head.

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