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Three dimensional evaluations of posterior pole and optic nerve head in tilted disc

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Statement of the Problem: For over a century, tilted disc syndrome (TDS) has been defined vaguely. The lack of consensus of the terminology arises from the lack of understanding of the pathogenesis of this condition. Also, myopic discs with temporal crescents or peripapillary atrophy (PPA) are histologically indistinguishable from TDS. Therefore, we examined the morphological background of the extreme ONH appearances such as the myopic tilted disc and the TDS by analyzing the posterior segment of the eye from a three-dimensional (3D) perspective.

Methodology & Theoretical Orientation: 107 eyes of 107 subjects were classified into 3 groups with respect to the optic disc torsion degrees: (1) mild torsion (0-30 degrees; 35 eyes), (2) moderate torsion (30-60 degrees; 35 eyes) and; (3) severe torsion (60-90 degrees; 37 eyes). SSOCT images were analyzed in coronal view, which supplements anterior-posterior depth (z axis in Cartesian coordinates).

Findings: The amount of optic disc torsion was significantly correlated with disc-DPE angle and Fovea-Disc depth ($r=0.548$, $P<0.001$ and $r=0.544$, $P<0.001$).

Conclusion & Significance: In conclusion, we describe specific types of posterior sclera configuration that corresponds to the increasing degree of optic disc torsion, even in the extreme ONH appearances such as the myopic tilted disc and the TDS. These findings suggest that the optic disc appearance is determined by the configuration of the posterior sclera.

Biography

Yong Chan Kim has his expertise in three dimensional evaluations of the posterior sclera and its association with glaucoma in myopic patients. His parameter deepest point of the eyeball (DPE) uses depth and distance from the optic disc to quantify the posterior sclera distortion in myopic subjects. He has built this model after years of experience in research in Seoul St. Mary's Hospital, The Catholic University of Korea.

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