Visual Disturbance in Dry Eye Disease

Shizuka Koh

The last decade in dry eye disease has been remarkable in that visual disturbance were added to the definition of dry eye for the first time in the 2007 DEWS report. Dry eye has been thought of as a chronic, symptomatic ocular surface disease that affects vision in a limited manner, e.g., in advanced or severe cases, since it has been difficult to detect visual or optical changes with standard visual acuity testing in dry eye. In regard to optical function, the instability of a disrupted tear film over the irregular ocular surface of dry eye is thought to be associated with optical disturbances. Recent emerging techniques have enabled us to quantify and show degraded optical quality or visual disturbance in dry eye. The increase in higher-order aberrations is caused by an irregular ocular surface with an unstable tear film. Glare and associated light sensitivity, which might partly be attributed to forward light scattering, are part of the symptomatology of dry eye. Recently, increased ocular forward light scattering in dry eye has been reported. Clinical application of objective optical sampling in dry eye and current understanding of visual disturbance in dry eye will be reviewed in this presentation.