Tip of the Month

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European Glaucoma Society
Innovation, Education, Communication, Implementation

Be aware of the potential influence of the vitreoretinal interface when interpreting OCT images of the retinal nerve fiber layer (RNFL) in glaucoma patients

The Science behind the Tip

Vitreous traction can cause artifacts that may obscure RNFL thinning, potentially leading to misinterpretation of disease progression. Studies have shown that average RNFL thickness is greater in eyes with partial posterior vitreous detachment compared to eyes without, highlighting the importance of vitreous status in OCT interpretation[1]. Additionally, epiretinal membranes can cause an increase in the thickness of retinal nerve fiber layer.

It is important to note that surgical removal of the membrane can lead to thinning of RNFL[2], which should not be misinterpreted as progression. Furthermore, epiretinal membranes are associated with schisis of the retinal nerve fiber layer[3] which can make the interpretation of the OCT image even more challenging. Clinicians should consider the influence of the vitreoretinal interface on RNFL thickness when evaluating glaucoma progression using OCT imaging.

References

1) Liu Y, Baniasadi N, Ratanawongphaibul K, Chen TC. Effect of partial posterior vitreous detachment on spectral-domain optical coherence tomography retinal nerve fibre layer thickness measurements. Br J Ophthalmol. 2020;104(11):1524-7.

2) Kim JM, Kim KN, Kim WJ, Kim CS. Influence of Epiretinal Membranes on the Retinal Nerve Fiber Layer Thickness Measured by Spectral Domain Optical Coherence Tomography in Glaucoma. Korean J Ophthalmol. 2019;33(5):422-9.

3) Hussnain SA, Sharma T, Hood DC, Chang S. Schisis of the Retinal Nerve Fiber Layer in Epiretinal Membranes. Am J Ophthalmol. 2019;207:304-12.

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