Enhanced Detection of Open-angle Glaucoma with an Anatomically Accurate Optical Coherence Tomography-Derived Neuroretinal Rim Parameter


Ophthalmology 2013;120:535–543
PMID: 23265804

Summary

Purpose

To investigate the diagnostic capability of the Bruch’s membrane opening-minimum rim width (BMO-MRW) parameter using the spectral domain optical coherence tomography (SD-OCT).

Methods

107 patients with glaucoma and 48 healthy controls were scanned with the SPECTRALIS® to obtain circumpapillary retinal nerve fiber layer thickness (RNFLT) measurements as well as to compute neuroretinal rim parameters. The BMO-MRW parameter was evaluated to determine its ability to identify patients with glaucoma from healthy subjects. Furthermore, this parameter was compared to the current rim parameter generated by SD-OCT devices, referred to as the “BMO-horizontal rim width” (BMO-HRW).

Discussion

The current method in which the rim is assessed with SD-OCT instruments, BMO-HRW, is based on a best-fit plane representing the BMO reference plane. The authors suggest that “BMO-MRW determined with SD-OCT overcomes the limitations of the current quantification of the rim”. They propose that it overcomes this limitation because the parameter “is independent from arbitrary reference planes that distinguish between rim and cup” and it takes into account the neuroretinal rim’s “varying trajectory relative to the point of measurement”.

Conclusion

The BMO-MRW parameter provides better diagnostic performance than RNFLT measurements or the BMO-HRW parameter.