

WHEN TO REFER AND WHEN NOT TO REFER



How diagnostic modalities aid in clinical decision-making.

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Many clinicians may consider OCT one of the key ancillary modalities in ophthalmic practices. OCT provides high-resolution, cross-sectional images of the retina, helping in diagnosis and management of retinal disease. In today's era of early intervention, better prognosis relies on prompt diagnosis for proper referral to implement appropriate treatment.

STRUCTURAL OCT

Given that diabetic retinopathy (DR) is the major cause of blindness among working adults with diabetes, screening for DR is critical, particularly because the majority of patients who develop DR may be asymptomatic.¹ Therefore, screening guidelines for patients with diabetes include a dilated fundus examination to assess findings associated with DR. DR-related complications, such as proliferation and diabetic macular edema (DME), require a referral to a retina specialist for proper management. Although clinically significant macular edema may be assessed through a dilated fundus examination, OCT is regarded as the most sensitive method to detect and evaluate DME.

Another case in point would be the patient with age-related macular degeneration (AMD) findings, such as macular drusen or retinal pigmentary changes. In such cases, OCT helps identify signs of conversion toward wet AMD, which would require prompt referral for anti-VEGF therapy. Such findings include but are not limited to subretinal and intraretinal fluid, as well as hyper-reflective areas within the subretinal space (Figure 1).

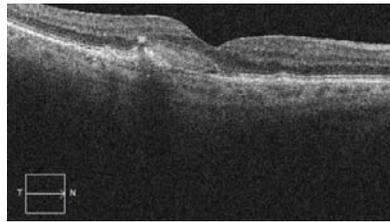


Figure 1. OCT helps detect signs of conversion toward wet AMD. Note the hyper-reflective areas within the subretinal space.

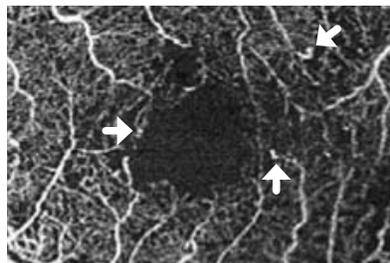


Figure 2. Small microaneurysms (as seen here), areas of nonperfusion, and foveal avascular zone remodeling can be easily assessed through the use of OCTA.

OCT ANGIOGRAPHY

The earliest changes of DR occur at the capillary vascular level. OCTA is an emergent noninvasive diagnostic tool that allows for exquisite capillary vascular network visualization. Small microaneurysms (Figure 2), areas of nonperfusion, and foveal avascular zone remodeling can be easily assessed through the use of OCTA. Such findings may help determine early DR changes that may not have been easily perceived during a dilated fundus examination alone.

Furthermore, OCTA has been shown to be valuable in the diagnosis

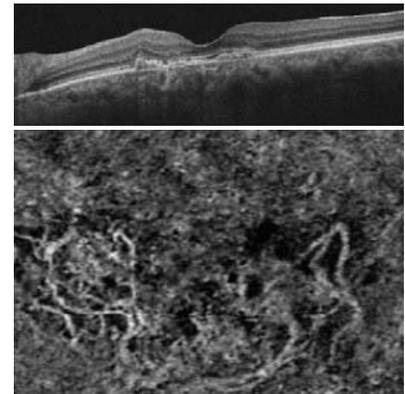


Figure 3. OCTA may help in the assessment of quiescent choroidal neovascular membrane.

of early choroidal neovascular membrane formation. Recent data have shown how OCTA may help in the assessment of quiescent choroidal neovascular membranes (Figure 3).² OCTA can clearly show the presence of a choroidal neovascular membrane, even though there is no fluid seen on OCT or fluorescein angiography.

CONCLUSION

I believe tools like OCT and OCTA help us become more confident with our diagnostic capabilities. ■

1. Facts About Diabetic Eye Disease. [nei.nih.gov https://nei.nih.gov/health/diabetic/retinopathy](https://nei.nih.gov/health/diabetic/retinopathy). Accessed March 17, 2019.

2. Shi Y, Motulsky EH, Goldhardt R, et al. Predictive value of the OCT double-layer sign for identifying subclinical neovascularization in age-related macular degeneration. *Ophthalmol Retina*. 2019;3:211-219.

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