Commentary: Comparison of standard and 'innovative wide-field' optical coherence tomography images in assessment of vitreoretinal interface in proliferative diabetic retinopathy: A pilot study

The authors of this article must be congratulated for a low-cost innovation to enable wide-field optical coherence tomography (OCT).[1] Ophthalmology, in general, and vitreoretinal practice, in particular, have become technology-driven.

Before the era of OCT, evaluating the macula was possible only with the slit lamp biomicroscopy using a contact or noncontact precorneal lens. Barring exceptionally observant people like Donald Gass, ordinary mortals usually failed to detect the subtle vitreoretinal relationships and changes taking place at each layer of the retina. A lot was left to imagination and speculation. To further the understanding of the pathology, the dependence on fundus fluorescein angiography was unreasonably high. The advent of OCT has revolutionized the practice of the vitreoretinal specialty. Over the years, the advances in the technology of OCT have also been very rapid, enabling us to get a near-perfect optical section of the retina, retinal pigment epithelium, and the choroid.

While the posterior pole has been adequately imaged, the ability to image the periphery of the fundus has remained a challenge. A wide-field OCT brings with it an ability to evaluate the peripheral retina and the vitreoretinal relationships better. The kind of information one is looking for in the periphery would be slightly different from what we need in the macular area. The authors alluded to one important indication—evaluation of vitreoretinal relationship in proliferative diabetic retinopathy.[1] Potentially wide-field OCT can be useful for many other conditions—both for active patient care as well as in research.

1. In eyes with Stickler syndrome, it would be possible to demonstrate areas of abnormal vitreoretinal attachments.[2] These are areas where one would expect issues during vitreoretinal surgery to reattach the retina
2. In eyes with peripheral retinoschisis, one would be able to delineate the extent of the schisis and any areas of localized retinal detachment at the edge of the schisis—both because of traction caused by the inner leaf of the schisis as well as by any retinal break in the outer layer near the border of schisis
3. Suspicious choroidal nevi/nevomas located in the periphery can be better imaged. It can also delineate the presence of any secondary retinal detachment surrounding the lesion[3]
4. In eyes with coloboma-related retinal detachments, one can try and explore nearly the entire border of the coloboma for intercalary membrane (ICM) detachments that potentially can indicate the areas of communication between subretinal space and sub-ICM space[4]
5. In eyes of coloboma presenting with unexplained hypotony, fistula around coloboma can be potentially detected[5]
6. Post scleral buckling one often sees residual thin film of subretinal fluid detectable on OCT, even when the break is closed. OCT in the periphery can demonstrate conclusively whether the break is open or not. Even a thin film of fluid communicating with the break can be detected
7. In eyes with peripheral hemorrhagic pigment epithelial and retinal detachments suspected to be because of peripheral polypoidal choroidal vasculopathy, one can potentially image the polyps in these locations better
8. In research related to high myopia, one can potentially frame the contour of the eye and on serial follow-up locate areas of staphylomatous bulging at an early stage and possibly relate these to localized alterations in choroidal thickness, etc.

I am certain that once this modality of examination is made as a routine, more applications will be found.

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