

Emerging Concepts Are Shaping the Future of Retina

One of the amazing things about practicing in retina is the pace of innovation in our subspecialty. Many things that are standard of care today did not even exist a short time ago. It is astounding to take a step back and think about what the norms of our profession were, say, 10 years ago.

In the short span of a decade, the role of imaging, and in particular spectral-domain optical coherence tomography, has advanced to a point of being practically indispensable in the assessment of patients. On the surgical front, evolutionary developments in vitrectomy platforms have brought us vastly increased cutting speed and greater fluidics control; meanwhile, refinements in instrument design have resulted in smaller instruments capable of delicate maneuvers without a sacrifice in efficiency, outcomes, and, most important, safety—and arguably, these innovations offer an improvement in all three. We have also seen an explosion in the use of pharmacologic agents in the retina space, so much so that some of our colleagues have put down their surgical instruments and only practice medical retina. Such a concept may have been previously unimaginable.

All of these things speak to evolutions in existing practices. What is amazing as we look to the future of retina is the revolutionary and potentially disruptive technology and concepts currently in the pipeline. The cover feature of this issue is dedicated to some of these ideas that may well shape the future: gene therapy,

retinal prosthetics, and ocular drug delivery devices among them.

Articles in the issue from Lauren Taney, MD, and Elias Reichel, MD; Mark Pennesi, MD, PhD; and

Thomas Chalberg, PhD, and Samuel Barrone, MD, pull back the curtain on the exciting and intriguing research being done in gene therapy. In terms of disruptive technology, this is one modality that has the potential to be an absolute game changer in our field.

Of course, we already have innovations in our hands in the form of retinal prostheses that have the potential to restore vision in patients blinded by retinitis pigmentosa. Two articles in this issue highlight the accelerated pace with which these devices came to reality as well as some insight into what the next generation of devices may look like.

The fantastic part of all of this is that while our curiosity is being piqued by incredible concepts and ideas, it is our patients who are benefiting from the heightened innovation in the retinal space. It seems like yesterday that we were abating

pathology to preserve vision; today the prevailing wisdom is that we can in many instances halt retinal disease in its destructive path and, more often than not, restore at least a modicum of vision.

What will we be able to do for patients tomorrow when the ideas currently on the drawing board make their way to the clinic and OR? ■



Allen C. Ho

Allen C. Ho, MD,
Chief Medical Editor

Robert L. Avery

Robert L. Avery, MD,
Associate Medical Editor