



STEPPING FORWARD INTO THE DIGITAL AGE

Like most other facets in our lives, the OR continues to undergo a digital transformation. One of the latest innovations allows another long-awaited step forward, this time in visualization of the surgical field. For the past 50 years, we have relied on dated analog technology requiring direct visualization of the surgical field through an optical microscope. As we all know, this requirement causes limitations and drawbacks in both surgeon experience and technological advancement.

In this issue of *CRST*, four colleagues examine 3D, heads-up digital visualization technologies that can transform the surgeon experience from the old, analog era to the new digital age. Viewing the operative field heads-up, without having to hunch over and strain your eyes at the oculars, can be freeing and life-changing, helping us to protect the longevity of our careers. Not to mention, heads-up 3D surgery increases our depth of focus and depth resolution, making everything from internal limiting membrane peels to the placement of MIGS devices easier to accomplish.

The timing of advances in 3D digital visualization systems is fortuitous in a post-COVID-19 world. These platforms allow virtual surgical observation via closed-circuit viewing and video streaming, which has numerous advantages in teaching fellows, residents, and even other colleagues. Compared with monocular assistant oculars, the view of the surgical field is vastly improved for residents and fellows. And when they are operating, you have the peace of mind of knowing that, if a complication occurs, the fellow simply gets up and you sit down—there are no height issues or interpupillary distance adjustments to be made.

Also, 3D visualization systems open the door for virtual mentorship, instruction, and teaching; I envision real-time surgical consultations taking place through 3D broadcast to colleagues. Physicians could share tips and guidance across the world in real time by streaming their view of the surgical field. And as traditional professional conferences will continue to be challenged post-COVID-19, need for remote educational opportunities will increase. The uptick of online webinars will continue, and we can expect to see more live surgical broadcast events. All of this may turn out to be a step forward in teaching and learning opportunities.

The ease and quality of sharing information will dramatically improve as 3D digital visualization technology continues to advance.

Similar to the smartphone revolutionizing digital photography, 3D digital visualization innovations will revolutionize the OR and the surgeon's experience. We will see rapid advancement in usability, shareability, and exchange of visual information, which ultimately will prove beneficial not only to the direct user but also to his or her virtual network of colleagues.

Another area in ophthalmology that is experiencing innovation is drug delivery, and many of us have begun to dabble in the use of compounded therapeutics and sustained drug delivery devices in anterior segment surgery. Both strategies are in different stages of infancy, but in the eyes of many of us they will be the future of patient care. We can all agree that decreasing or eliminating patient compliance issues after surgery can result in better visual outcomes and happier patients. It can also help to decrease the number of postoperative visits, which in the era of COVID-19 is a welcome outcome.

Methods of drug delivery and our regimens for postoperative care are continually evolving, and there is no one right approach. In the end, it is up to each of us to find a strategy that we believe can enhance the patient experience. Perhaps the methods shared by our colleagues in this issue will spark your interest in a new approach or solidify your faith in your current regimen.

Digital microscopy is here, advances in drug delivery are here, and the current benefits of both are numerous. But we are merely at the beginning of what these innovations will do for us, our colleagues, and ultimately our patients. Let's continue to push the boundaries of innovation. ■

A handwritten signature in black ink that reads "William F. Wiley, M.D." with a horizontal line underneath.

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