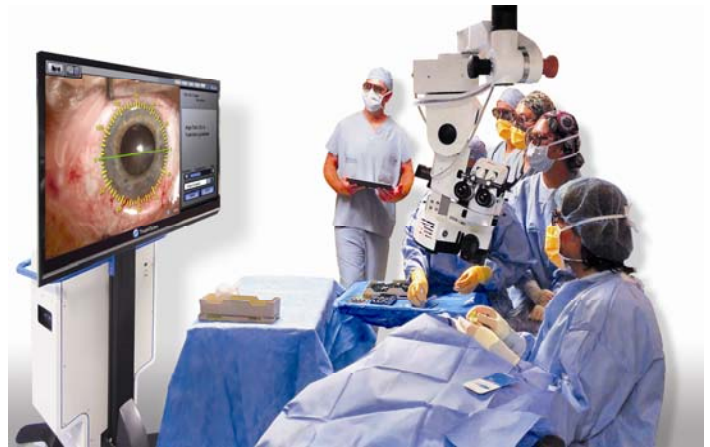


TrueVision – A New Way of Viewing Cataract Surgery

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At the recent 2013 American Society of Cataract and Refractive Surgery Annual Meeting in San Francisco, femtosecond cataract lasers dominated the spotlight. Competition between manufacturers has risen, and this has led to aggressive marketing and research.

While many physician-surgeons were focused on comparing these technologies, between these booths were several new developments. In this article I focus on one of those innovations: TrueVision.

Initially developed as a new way to perform cataract surgery, TrueVision enables the surgeon to sit straight up and look at a 3D screen while wearing 3D lenses to perform stereoscopic surgery. Supporters suggest that this will reduce back strain and decrease later in life back issues for surgeons. Additionally, the video can be replayed and watched in 3D, allowing for excellent teaching cases. While this was very intriguing when it first launched, uptake was very low for several reasons, many of them technological limitations.

So what has changed over the past several years? To begin, the technology has improved—not only TrueVision 3D Surgical's software, but the equipment we have available in all aspects of practice. Consider how much computers have advanced in the past 5 years.

Resolution of video is tremendously improved with near scope-like quality. In addition, 3D television sets are now commonplace, and therefore, expensive, specialized monitors are no longer required for viewing videos. In fact, laptop computers are now available with 3D settings, allowing video editing to be performed with ease even while on the go.

While performing, recording, and watching surgical videos in 3D can be very cool, the question arises of whether it is necessary, or even financially desirable, to keep in a practice. With the latest software updates in place, the answer is a resounding yes.

In addition to real-time images, the system can now perform real-time overlays to provide the surgeon with guidance. Similar to a heads-up display, overlying arcs can tell the surgeon exactly where to place limbal relaxing incisions or where to place a toric IOL. It even can tell a surgeon how much to rotate a toric IOL if his astigmatism inducing incision ends up being placed at a different axis. This is a major advance that creates a complementary, almost necessary, technology for femtosecond lasers.

While femtosecond lasers can currently perform limbal relaxing incisions, they do not recognize anatomical landmarks to account for the cyclotorsion that occurs when a patient lies down. This can lead to improper location of the incisions, perfectly arcuate as they may be created. Using pre-op images of the patient's eye in an upright position, the TrueVision system eliminates this issue.

I was able to demo the unit on my own eye and was incredibly impressed with the responsiveness of the system. Any rotation of my eye or a model eye resulted in an immediate reposition of the recommended LRI arcs. Who knew I had nearly 2 diopters of astigmatism?

Perhaps the most impressive additional technology was the ability to overlay an image over the exact center of the visual axis taken preoperatively. While many physicians fret over the effect of angle kappa and how best to center multifocal lenses, this allows the surgeon to remove all guesswork and guarantee perfect centration every time. As I am unaware of any other system that can currently do this, to me that makes this system invaluable to premium lens practices.

With its upgraded system the TrueVision system has brought a lot to the table in 2013. An addition to the surgeon's refractive suite, it will certainly enable the doctor to improve his or her outcomes.