

Visualization, guidance goes 3D

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Boston—Three-dimensional (3D) visualization and guidance may be the future of lens IOL implantation. Douglas Koch, MD, posed two questions: Can surgeons eliminate marking for toric IOLs and eliminate the oculars on the microscope as well?

In an investigation of these goals, Dr. Koch and his colleagues at the Cullen Eye Institute, Baylor, TX, evaluated the linkage of the iOptics Cassini Corneal Analyzer and TrueVision 3D visualization system for toric IOL alignment.

The Cassini images were obtained preoperatively and they were imported into the TrueVision unit.

He explained that the astigmatism is calculated by the Cassini unit at 150 points in the center 3 mm of the cornea.

The 3D system has a camera attached to the back of a microscope and a 3D screen. First, the TrueVision software looks for the limbus and locks on after locating it. It then overlays the Cassini image and lines up the vessels on the two images. The software also recommends incision placement and provides a marking line.

“Many images aligned rapidly and accurately and some were initially misaligned,” Dr. Koch said.

He has experienced occasional vessel misidentification, which was resolved with manual vessel alignment.

The new high-definition 3D camera is now available for the device. Dr. Koch noted that he was able to do four cases including an IOL exchange with no oculars on the microscopy.

“This system is almost there and it is much more comfortable,” he said.

The future, according to Dr. Koch, is better automating and capturing of vessel details. Toric IOL nomograms are being developed.

“We will eventually be able to get rid of the oculars and the backache, which is another promising element of the system,” he said.