New Technology Aids Astigmatism Correction

Cutting-edge Device Optimizes Cataract Surgery Results

By SERENAH McKAY

New technology is helping surgeons give better vision to their cataract patients, even those with a high degree of astigmatism.

Robert J. Weinstock, MD, at the Eye Institute of West Florida was one of the first five surgeons in the world to use the ORange, a device that measures the refraction of the eye during surgery.

"This gives you real-time information to help you be more precise and get better results for the operation," said Weinstock, who specializes in refractive cataract and Lasik surgery.

He and colleague Neel Desai, MD, have been using the device for the past two years.

"I was part of the initial FDA studies," he said. "And now we've been using it successfully, post-FDA approval, for the past year."

One high-profile client of the institute who recently benefited from the new technology is professional golfer John Daly. His astigmatism was corrected in August 2009 in surgery utilizing the machine, according to a press release from the institute.

The ORange device is the world's first intraoperative wavefront aberrometer. Developed by WaveTec Vision Systems of Aliso Viejo, Calif., the ORange is so named because it is used in the "OR" on a "range" of applications, according to WaveTec Vision's website.

The ORange analyzes light that is reflected from the retina to provide a real-time accurate measurement of the eye's focusing capabilities during surgery. This allows the surgeon to more precisely choose the needed lens implant power and correct the patient's astigmatism.

The device is used for all cataract surgeries, Weinstock said, and can actually measure the refraction of the eye while the surgeon is operating, and in different stages of the operation.

"For instance, after you take the cataract out of the eye, it can measure the vision and tell you what power of implant matches that eye, so the implant can function without the need of glasses and perfectly match the eye," he said.

"It can also tell you whether the cornea is shaped irregularly. If it's oval-shaped, that's called astigmatism. So after you put the implant in, it can measure the eye and tell you where the astigmatism is, and you can move the implant to perfectly correct the vision."

Everyone has a little astigmatism, Weinstock said, but at least 50 percent or more undergoing cataract surgery have a degree of astigmatism that, if not corrected, would require them to need glasses after surgery. The ORange can help these patients have clearer vision while still in the operating room, and lessen the need for glasses afterward.

"We correct astigmatism with incisions on the cornea," Weinstock explained. "And this machine tells us how many to make, how long to make them and where to make them. And then we can retake measurements with the machine to see if we corrected them all or if more correction is needed."

The device also is helpful with patients who previously had Lasik surgery to correct their vision, he said. Many people who've had Lasik are now reaching the age where they have cataracts. Because Lasik changes the shape of the cornea, it makes it difficult to measure in clinic the proper lens power to use. The ORange can help by giving precise measurements during the surgery.

Another area where the machine is especially useful, Weinstock said, is with patients with a very high level of astigmatism who require a special oval-shaped toric implant. The device's data can guide the surgeon as he places the lens to help him get it in the optimum position.

The Eye Institute of West Florida was founded by Weinstock's father, Stephen Weinstock, MD, in 1974. Besides the company headquarters and Ambulatory Surgery Center in Largo, the institute has secondary patient facilities in North Clearwater and St. Petersburg.