Take-home message: A femtosecond laser platform (Victus, Bausch + Lomb) features an enhanced patient interface kit with a smaller outer diameter and other modifications that bring easier handling and centration along with greater stability.

By Cheryl Guttman Krader; Reviewed by Y. Ralph Chu, MD

**Bloomington, MN**—An enhanced patient interface kit for a femtosecond laser platform (Victus, Bausch + Lomb) brings multiple advantages for its use in cataract and refractive surgery, according to Y. Ralph Chu, MD.

The latest hardware upgrade features a new ergonomic design that allows for easier opening and closing of the clip and a more comfortable grip. In addition, it offers better suction for greater stability, introduces a colored skirt for increased visibility, and has a smaller diameter that enables access in more eyes.
As another modification, the laser also has new vertical line spacing settings that increase the vertical distance between pulses, allowing for delivery of fewer pulses with reduced energy exposure and increased efficiency when performing capsulotomy and lens fragmentation.

“As femtosecond lasers are becoming more mainstream in cataract surgery, we are seeing continued improvements in the technology that aim to improve patient outcomes,” said Dr. Chu, founder and medical director, Chu Vision Institute, Bloomington, MN.

“The changes to the patient interface and pulse delivery settings for the platform reflect that evolution and augment this versatile system that was built from the ground up to have applications for both corneal refractive and cataract surgery,” Dr. Chu said.

Hardware changes

The suction ring on the femtosecond laser now has more suction ports that cover 360° around the inner edge. As a result, the ring attaches more evenly across the scleral surface with less potential for any slippage.

In addition, patient comfort is increased with vacuum distribution through more ports.

“Having a stable eye is critical for accurate delivery of laser pulses,
and in particular, the new suction ring is improving capsulotomies,”
Dr. Chu said. “As the eye is kept steadier, the potential for
irregularities or tags at the capsular edge is decreased.

“In our hands, however, the [platform] was already performing
reliably in creating free-floating capsulotomies,” he said. “In my
mind, the improved suction has a greater advantage when using
the laser for LASIK flaps where shifting of the ring is more likely to
occur because of the increased tendency for eye squeezing by
younger patients.”

The suction ring has also been modified to feature a green skirt that
enables optimal centration and eliminates tilt.

“With the increased visualization afforded by the change, centration
is now easier and faster, and eliminating tilt helps assure the
accuracy of corneal and arcuate incision placement, Dr. Chu said.

In addition, the outer diameter of the ring has been reduced to 19.5
mm, enabling use of the laser in patients with smaller fissures.

New laser settings

Reprogramming of the femtosecond laser to increase the vertical
line spacing is the result of the discovery that the shape of the
plasma bubble created when femtosecond laser energy is delivered
inside the eye is elongated, like a hot dog standing on its end,
rather than spherical, which is the case for pulses placed in the cornea.

Increasing the vertical line spacing between pulse bubbles allows for delivery of fewer pulses that should translate into less energy exposure to the eye, faster procedure times, and cleaner capsulotomy cuts.

Dr. Chu said he has noticed differences in terms of less gas build-up, which further enhances visualization, and faster treatment times after the settings were changed. Now, he is undertaking a prospective study to confirm the increased speed of the femtosecond laser portion of the procedure and to investigate whether it translates into reduced phacoemulsification time and better visual results.

“Ideally, this change in the laser setting will not only make the procedure more efficient, but it will also bring benefits to the patient,” Dr. Chu said.

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