Today's New and Improved Surgical Microscopes

Users highly rate the "focus lock" feature for easy movement in and out of the lateral position while maintaining the focus.

BY DAMIEN F. GOLDBERG, MD

Recent advances in surgical microscopes have made performing cataract surgery easier and safer. The optics and illumination of the new microscopes are nothing short of amazing compared with earlier instruments'. My colleagues and I tested both the Opmi Lumera 700 (Carl Zeiss Meditec, Inc., Dublin, CA) and the Leica M844 (Leica Microsystems Inc., Bannockburn, IL). We found that both microscopes achieve a crisp red reflex at lower levels of light much more easily than previous devices. Creating a capsulorhexis is now significantly easier regardless of the opacity of the lens and in cases with significant cortical cataracts.

A LOOK AT THE LEICA

My local hospital bought the Leica M844. Before I even sat down for my first case, the operating staff and I became fans of this instrument's optics, ergonomics, and size. The footplate is significantly smaller than that of other microscopes, yet the extended net reach makes it easy to position around the operating table. The staff is also able to transport it when needed.

My team immediately loved the "focus lock" feature for quick, easy movement in and out of the lateral position while maintaining the focal plane. With a slight turn of one of the two handles, the microscope glides exactly where it is needed for the surgeon's focus of the surgical field. The dual-bulb and dual-prism system in Leica microscopes generates true three-dimensional illumination using direct illumination (Figures 1 and 2). The homogeneous image created at very low levels of light ensures patients' safety and fatigue-free viewing for the surgeon.

What really set the Leica M844 apart for me was its touch screen intuitive control unit. Much like current phaco machines, this microscope's zone of focus and lighting settings can be customized electronically by the surgeon. This is beneficial in a setting where more than 25 ophthalmologists share the same microscope.

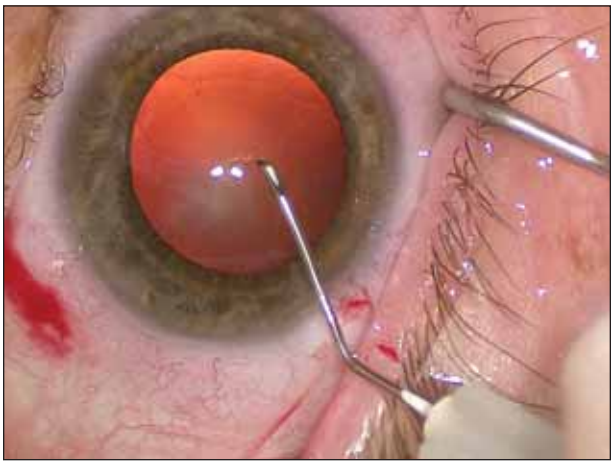

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Figure 1. An anterior capsulorhexis performed through the Leica M844 surgical microscope.

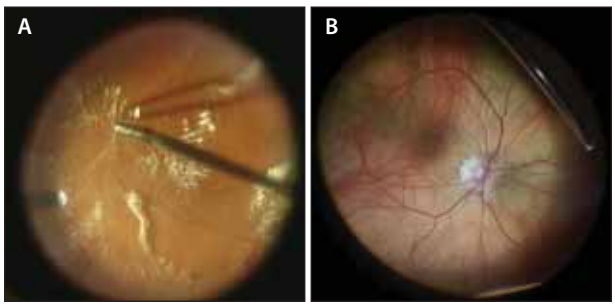

Figure 2. A retinal peel performed through the Leica M844 (A) and a retinal view (B).

ADDITIONAL FEATURES

With the touch of a button on the microscope's display, my name comes up on the screen. Instantly, the Leica M844 APO OptiChrome optics choose a low-light setting, and the microscope is set according to my preference as an anterior segment surgeon. With another simple touch on the display, the microscope can instantly increase the level of lighting and change the focus and the image's orientation so my retina counterparts can maximize their view for a vitrectomy procedure.

I am fortunate to work with a highly trained ophthalmic surgical staff, but providing them with a faster and easier way to set up the microscope has significantly reduced turnaround time and improved our efficiency. The difference is most evident when I am assigned to an OR as on-call staff for an emergency. When the on-call personnel were only loosely familiar with the surgical equipment, they could take 30 minutes just getting the previous microscope set up properly. They now accomplish the job in 5 minutes.

Another feature of the Leica M844 that I enjoy is that the display can double as a real-time video screen of the surgeon's view. This built-in screen enables the OR staff to better anticipate my next move during the case so that they can get the IOL ready or pull additional instruments. This frees the OR of clutter and an extra video cart.

Once I finish a case, the extended arm reach can be glided out of the way, and the microscope instantly autoresets to my initial settings, thus making it that much easier to begin the next case.

CONCLUSION

The Opmi Lumera and the Leica M844 represent tremendous technological improvements. In my clinic, the latter's optics, easily set focus, lighting, ergonomics, and focus lock enhance surgery, improve safety, and maximize efficiency. ■

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