New UBM Technology Ensures Accurate ICL Sizing

UBM ultrasound on the ABSolu Ultrasound Platform with new 5-ring annular imaging gives precise, reliable measurements with a user-friendly interface.

BY TAYLOR B. STRANGE, DO

I have been implanting the Visian ICL (STAAR Surgical) for approximately 4 years, as a refractive option for patients who are not candidates for LASIK. In the past year, my usage has increased to one ICL implantation per month, particularly since the release of the EVO/EVO+ Visian ICL with the KS-AquaPort, which eliminates the need to perform a laser peripheral iridotomy.

To ensure I was getting the most accurate sizing with a greater volume of ICL implantations, I upgraded my UBM platform to the ABSolu A/B/S/UBM Ultrasound Platform (Lumibird Medical) 14 months ago. The high-definition detail of the ABSolu's UBM is amazing. Because its visualization is better than our previous UBM device (EyeCubed), my technicians obtain scans faster; generally, patients are only under the ABSolu for about 5 minutes. Furthermore, my technicians find the ABSolu's patient interface more comfortable and user-friendly than our previous model. Patients are comfortable during their scan, as we have had no complaints. My technicians tell me all the time how thankful they are to have the ABSolu over our previous model.

EASY AND ACCURATE SULCUS-TO-SULCUS MEASUREMENTS

Since obtaining the ABSolu, my ICL calculations have been spot on, not over or undersized. The ruler on the ABSolu is user-friendly and incredibly accurate for sulcus-to-sulcus (STS) measurements. My current protocol is to take three STS measurements per eye to verify the measurement. The ABSolu's imaging display makes it easy to see if I have a good scan or not. I had to explant one ICL that was undersized with previous technology, whereas I have not had any sizing issues since using the ABSolu.

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NEW UBM TECHNOLOGY

The ABSolu has the ability to scan linearly, as opposed to a sector scan, offering greater imaging capability. The greater sensitivity of the UBM increases the ease with which ICL measurements can be made. It features a 50MHz probe that provides unique detail and reveals subtle ocular structures; this imaging capability allows for even greater patient care capability, both for ICL measurements and glaucoma diagnoses.

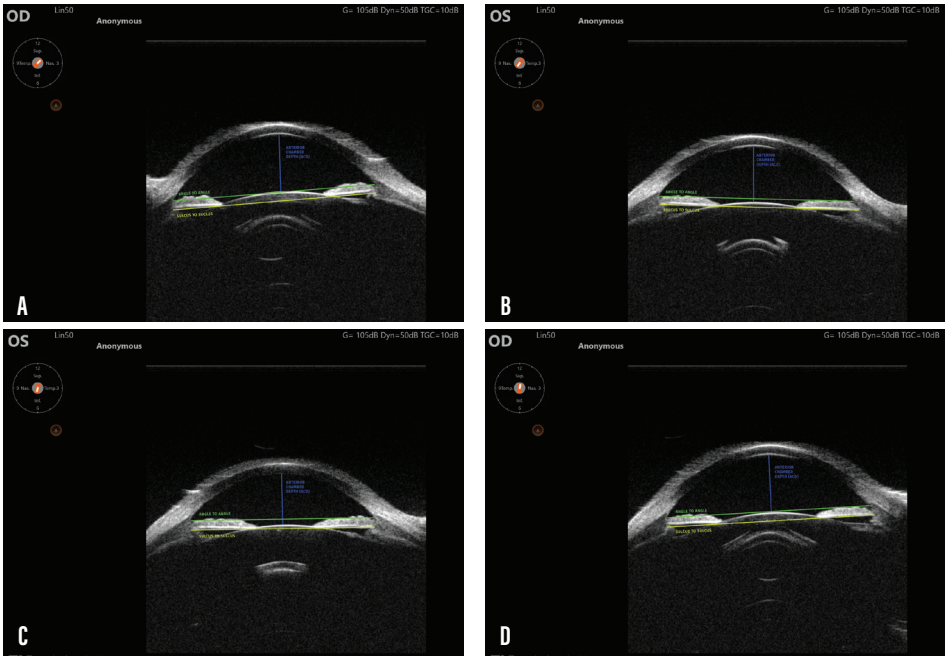

Figure 1. Ultrasound sections of the right (A and B) and left (C and D) eyes of two patients taken with the ABSolu's UBM. The images show great visualization of the structures of the cornea, the anterior segment, and the structures behind the iris.

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CASE STUDY

I recently had a case that highlights the utility of the ABSolu A/B/S/UBM Ultrasound Platform (Figures 1 and 2). A 40-year-old Asian female presented in June 2022 for an ICL evaluation. She complained of contact lens intolerance from overuse, and her eyes were dry, red, and irritated. The examination showed 2+ SPK on both corneas, with a 1+ injection of the conjunctiva OU. Otherwise, the examination was normal. The refraction of the right eye was -10.00 +0.75 X 085, and the left eye's refraction was -11.00 +0.50 X 096.

I opted to implant the EVO ICL bilaterally. The patient's corneas were too thin for LASIK, SMILE, or PRK. EVO was her only and best option. Using the ABSolu, I measured the ACD of the left eye as 3.10 and of the right eye as 3.05. The ABSolu has been more reliable on the STS measurements, rather than having to rely on calipers or white-to-white measurements with biometry. I have seen the caliper measurements differ drastically when compared to STS measurements.

On postoperative Day 1, the patient showed 20.15 UCVA OU, and she was very satisfied with the outcome.

OTHER APPLICATIONS FOR THE ABSOLU

Beyond ICL implantations, I use the ABSolu to conduct A-scans of dense cataracts when I am unable to obtain biometry on the IOLMaster 700 (ZEISS). For A-scans, again, the ABSolu has been fantastic, producing very accurate, high-quality images. We haven't met a cataract the ABSolu can't get through.

Figure 2. The Absolu A/B/S/UBM Ultrasound Platform.

ANNULAR ARRAY TECHNOLOGY

The ABSolu features a 20MHz B-scan probe with five transducers in a ring that emit the ultrasound waves in an alternating pattern (called 5-ring annular imaging) for a much sharper image than what other probes are able to produce. The more extensive view with the ABSolu is helpful for visualization of the entire globe (with a standoff), from the cornea deep into the orbit.

GREAT OUTCOMES ARE THE PRODUCT OF RELIABLE MEASUREMENTS

When it comes to ICL surgery, it's all about correct sizing. It really starts with the UBM. If you have great measurements, you'll have great outcomes. In summary, my STS measurements with the ABSolu have been faster and more precise, and I have high confidence in its readings thanks to the device's easy-to-read display. This confidence in the ABSolu's readings alleviates a chief concern when I choose to implant an ICL. ■

TAYLOR B. STRANGE, DO
- Alliance Vision Institute, Fort Worth, Texas
- tbstrange1@gmail.com
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