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**FOCUS ON ...**

## **A High-definition Ultrasound System**

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The Aviso A/B (Quantel Medical, Bozeman, MT) is a next generation, high-definition ultrasound system with touchscreen controls, available in a portable laptop or desktop PC workstation configuration. The system provides surgeons with a high-definition image of the posterior segment and biometry clinically equivalent to laser interferometry.

Optional high-frequency probes are also available. The posterior segment high-frequency probe provides an image of the posterior segment at double the resolution of the standard B-scan probe. This probe provides an imaging option when optical coherence tomography (OCT) cannot be used due to opacification of media. The linear UBM probe provides an image of the entire anterior chamber from the epithelium to the ciliary process for ultra-high resolution diagnosis and measurements.

### **FROM ANALOG TO DIGITAL**

"I am very pleased with the transition that Quantel has made from the analog system to the digital," says Jerry Sebag, MD, FACS, FRCOphth, of the VMR Institute, Huntington Beach, CA.

Dr. Sebag specifically notes the high resolution and ease with which he can obtain images and share them with patients. He also uses the images for research purposes to better identify the role of the vitreous in retinal disorders.<sup>1</sup>

"We have a number of studies that are ongoing, utilizing ultrasound to assess the vitreoretinal interface in conjunction with high-resolution OCT imaging," says Dr. Sebag. "We find that the combination is very useful. For example, we have been able to investigate the pathophysiology of patients with premacular membrane and vitreo-maculopathies using the Aviso to detect the presence or absence of a posterior vitreous detachment and the combined OCT scanning laser ophthalmoscope to characterize the vitreoretinal interface in patients who have macular pucker and macular holes."<sup>2</sup>



### **ULTRASOUND AND OCT**

Dr. Sebag believes that the future applications of ultrasound technology will be very useful. "In some instances, many of us thought that OCT was going to replace ultrasound. I no longer think this is true," he says. "Especially if you are interested in the vitreous and whether it is attached or detached. We need to use both systems to get a proper assessment of the state of the vitreous and the state of the vitreoretinal interface.

"The future will likely see great expansion in this application because we are going to have drugs that will enable us to simultaneously liquefy the gel vitreous and separate the vitreoretinal adhesion to induce either a therapeutic or a prophylactic posterior vitreous detachment."

Dr. Sebag predicts that in the future doctors will need to have both ultrasound and OCT in order to provide the ability to monitor the response to therapy with pharmacologic vitreolysis.<sup>3-6</sup>

## BIOMETRY

The Aviso A/B allows physicians to take up to 10 A-scans per eye using the immersion or contact technique. The software has built-in pattern recognition and can adjust for eye types, such as phakic, dense cataract, aphakic, and pseudophakic materials, as well as for specific eye segments, which can be adjusted for issues such as silicone oil in the vitreous. In addition to the 6 formulas available for IOL calculation in normal eyes, the system has 6 formulas for post-refractive eyes.

The device automatically discriminates for a "scleral echo" after the retina spike. This feature automatically eliminates optic nerve scans, a common biometry error, which can result in postop surprises in patients presenting with advanced glaucoma.

## EASE OF USE

Physicians can store patient data in the onboard database or send it to their intranet or electronic medical record (EMR) system.

"I find the Aviso system to be a very useful adjunct to other imaging technologies, particularly with respect to the vitreoretinal interface," says Dr. Sebag. "I also have the ability to access data from any part of my office. I am preparing to migrate to EMR and the Aviso fits very nicely into the digital platform." **RP**

For more information on the Aviso A/B, visit [www.quantelmedical.com](http://www.quantelmedical.com).

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