THE NEXT-GENERATION AUTOMATED OCT AND FUNDUS IMAGING SYSTEM

Integration of Topcon Maestro2 can optimize clinical workflow, enhance the patient experience, and empower comprehensive eye care.

BY DI ZHOU, MD

Since its introduction in the early 1990s, optical coherence tomography (OCT) has become an indispensable instrument for any modern ophthalmology office. Maestro2 by Topcon Healthcare is the latest innovation in OCT technology that combines OCT and fundus imaging in one easy-to-use, compact device (Figure 1).

For the past 2 years, I have used Maestro2 across multiple offices and found it performed exceptionally well in today's demanding ophthalmology practice environment. In this article, I will provide the perspective of a daily Maestro2 user, offering insights into how its optimized design contributes to a more efficient workflow, an enhanced user and patient experience, and exceptional comprehensive care.

TRANSFORMING CLINICAL WORKFLOW

In a conventional ophthalmology office, patients rotate through several instruments, often located in different rooms, during their visit. This is both time-consuming and inconvenient for the patients, many of whom are elderly and have difficulty maneuvering around spatially and keeping their focus during imaging. This approach is also inefficient from the provider's perspective, as valuable time is lost during machine setup, patient acclimation, and image capture. Instead of focusing on providing care, resources are spent on data acquisition.

The newer generation of multimodal OCT systems radically redefines the typical workflow in the office. With Maestro2, my team can capture color fundus photos and OCT images across the macula, disc, wide-field posterior segment, and anterior segment regions, all in one setting. For a comprehensive ophthalmology practice, Maestro2 covers almost all of the imaging one would need with just one system.

Unlike older machines, the entire image-capturing process by Maestro2 is swift, typically taking approximately 2 minutes per patient. For our patients, this optimized workflow provides a better experience, as less time is spent on tiresome imaging, while the overall visit length can be shortened to accommodate busy schedules.

A more efficient workflow benefits the practice as well. As the US population continues to age, there is more demand for eye care than ever before. An enhanced workflow allows the practice to accommodate more patients and reduce the wait time before a visit.

INTUITIVE USER INTERFACE

At first glance, one may think that a comprehensive imaging system would be difficult to handle, but Maestro2 is accompanied by an intuitive user interface that is simple to navigate. This is particularly timely as the current competitive labor market leads to high staff turnover, where a system with a low learning curve can help minimize disruption in the clinic.
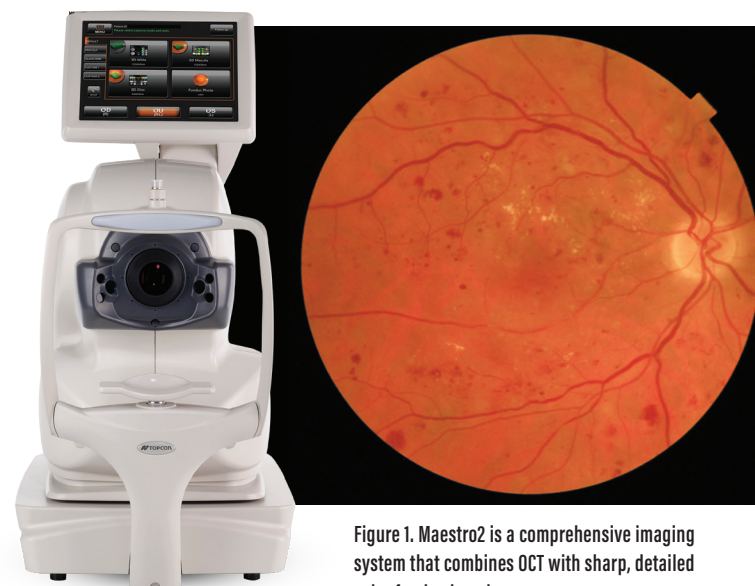

Figure 1. Maestro2 is a comprehensive imaging system that combines OCT with sharp, detailed color fundus imaging.

Maestro2 can be controlled by a touchscreen directly on the machine, which is intuitive for staff, regardless of their past ophthalmic background. Touchscreen control also has the benefit of eliminating the need for a mouse and keyboard, which typically require staff members to be seated to operate. In a space-limited environment, this setup is particularly efficient.

ENHANCING PATIENT CARE

An aspect that often gets overlooked is that when diagnostic images are easier to obtain, they tend to be captured more often, aiding in disease diagnosis, longitudinal assessment, and patient education.

In one particularly memorable case, a series of imaging, which normally would not have been considered, led to a positive outcome. In this case, a patient came into our practice for a regular eye examination with no vision concerns but complained of constant headaches. Fundus imaging showed a swollen nerve, while OCT showed a thickened nerve fiber layer, indicative of optic disc edema.

The patient eventually underwent further evaluation that confirmed the initial diagnosis and received treatment that improved their condition. This case highlights how easy access to imaging can aid in early disease diagnosis and management.

In many ophthalmology practices, OCT images are only acquired at selected visits due to time constraints. When OCT images can be obtained quickly and efficiently, longitudinal assessments can make it easy to track disease progression and treatment efficacy.
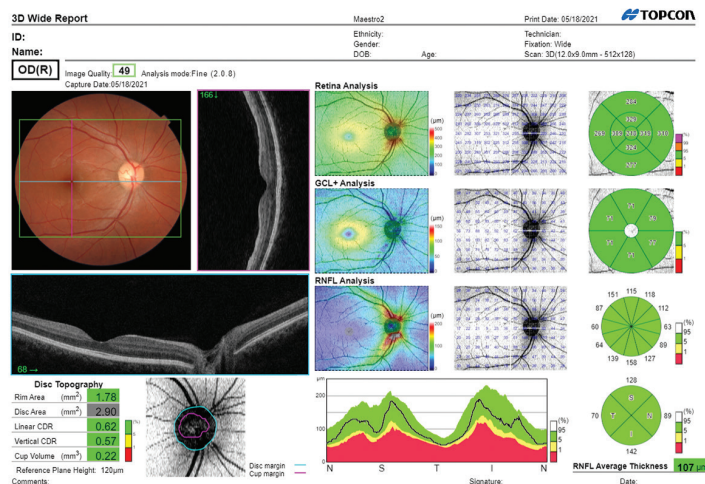
Figure 2. Maestro2 generates a number of diagnosis-enabling reports including the 3D Wide Report.
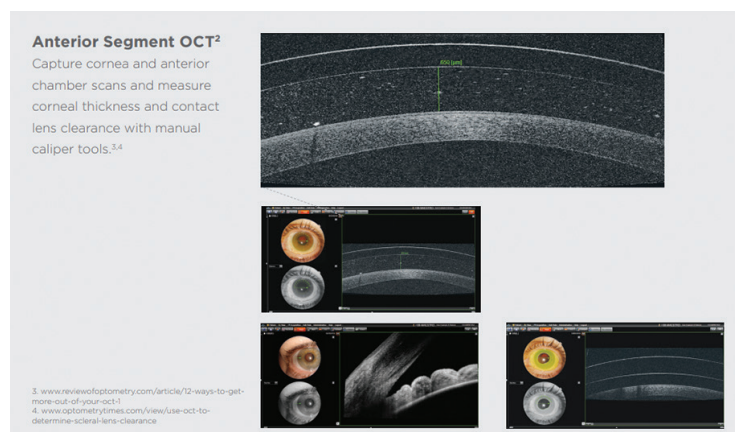

Figure 3. With Maestro2, it is easy to capture anterior segment OCT images and measure corneal thickness with the manual caliper tool.

For this purpose, Maestro2's IMAGEnet® software makes longitudinal evaluation a breeze. The software enables scans at the exact location at each follow-up visit to help track the anatomy over time. In cases where the disease continues to worsen, timely observations can lead to early adjustments in treatment and potentially a better prognosis.

For many patients, images speak louder than words from their providers. Frequently, when presented with images of their anatomy as compared to normal anatomy, our clients become more conscious of the anatomical changes that have occurred and the potential implications without medical intervention. We found that these approaches allow the patients to be more engaged in the discussion, enabling them to better assess the situation and make informed decisions on the next steps.

EMPOWERING COMPREHENSIVE CARE

My team frequently sees patients with a wide range of anterior and posterior segment issues. Maestro2 is an OCT designed to support both regions with capabilities including anterior segment line scans and radial anterior segment scans, as well as 3D wide scans and 3D disc scans at the posterior segment (Figure 2).

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Scan the QR code to see my video summarizing the extensive capabilities of Maestro2.

The scan patterns I use most often are the disc and macula scans since they help diagnose a remarkably wide range of retinal diseases. Here, Maestro2 shines as it can automatically generate reports with details such as the retinal and ganglion cell layer thicknesses.

On the anterior segment side, Maestro2 captures sweeping slices of the cornea that may reveal pathology, such as scarring, and enable corneal measurements (Figure 3). Historically, corneal thickness has been measured using ultrasound pachymetry, which requires numbing and gentle tapping of the cornea with a probe. For Maestro2, a built-in caliper tool allows easy corneal thickness measurement, which has predominantly replaced ultrasound pachymetry in my practice.

While possessing a large trove of functionalities is clearly important, image quality is another key feature that should be evaluated. Maestro2 performs phenomenally as it produces high-quality OCT images largely clear of segmentation artifacts and test-retest variability. The quality of the color fundus photos is top-notch, with sharp images that can reveal small hemorrhages that are hard to find.

ADDING MAESTRO2 TO YOUR PRACTICE

Providers planning to purchase an OCT should make several considerations. First, the long-term prospect of purchasing a new device should be examined. Since OCT machines constitute a major component of any examination lane, product quality and post-sale support is essential to ensure long-term use.

In my experience, Topcon representatives are very responsive both before and after purchase. Software questions and upgrades can be quickly resolved through remote troubleshooting, and our machines remain in good condition despite heavy daily use.

It is also essential to evaluate the current clinical workflow and identify shortcomings that the new machine will complement. Maestro2's key features include an automated, comprehensive OCT and color fundus system that is fast, easy to use, and generates high-quality images. Offices that could benefit from a more efficient workflow and higher customer satisfaction should consider adding to their practice the Maestro2 robotic OCT and color fundus camera. ■

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