

INCREASING CLINICAL ACUMEN WITH INTEGRATED DIAGNOSTIC IMAGING



From static text and images to a dynamic diagnostic environment.

BY AARON E. LECH, OD

When managing ocular disease, our comfort level increases with our ability to see the disease process. Data-rich technologies, such as ultra widefield imaging, structural OCT, and OCT angiography (OCTA), provide invaluable insights about eye health. The new Integrated Diagnostic Imaging (IDI) platform (ZEISS) increases our efficiency by combining data from all of these, and other, modalities to give us a complete clinical picture.

TARGETED REFERRALS, ENHANCED PATIENT PERCEPTIONS

When we have excellent information from our diagnostics, our referrals are more detailed, and we can direct the subspecialist to a specific area of interest rather than offer a general impression. This facilitates an efficient flow between optometrist and subspecialist and creates a collegial network built upon the subspecialist's confidence in our diagnostic ability.

Our utilization of this technology also influences patients' perceptions. Being able to use Integrated Diagnostic Imaging to show patients visual representations of their disease, as well as changes or progression, assures them that they are receiving excellent care. This type of engagement helps them understand their condition and why adhering to therapy and follow-up appointments is so important.

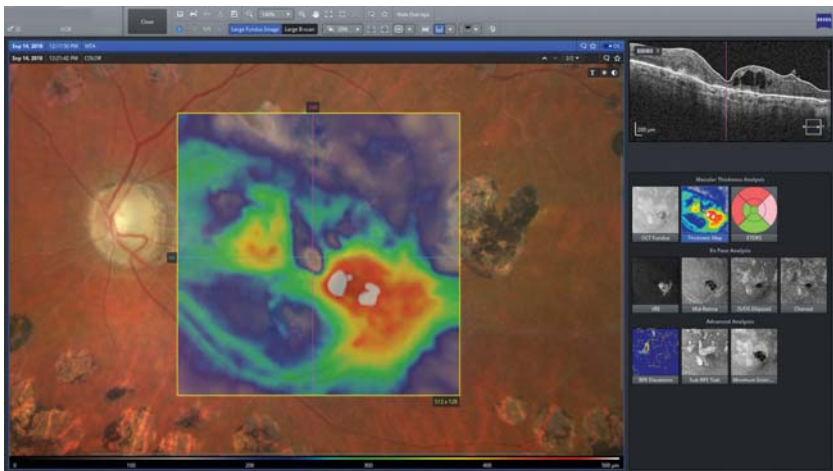


Figure 1. Case 1: A combination of OCT thickness mapping, demonstrating DME in a previously quiet eye.

TRUE DATA MANAGEMENT

When electronic medical records and electronic health records were introduced, the idea was to convert written notes to text-based, searchable fields. Images could also be stored and cataloged, but as static files, the data remained two-dimensional, missing an important clinical opportunity.

With the Integrated Diagnostic Imaging platform, data management is not just about entering information in the proper fields, but making sure the information in these little "packets" can be dissected and recombined with other diagnostic modalities to deliver a new piece of diagnostic data and clinical presentation. We now have report findings, trend analyses, comparisons, and so on, which were not available before.

In addition, photographs, OCTs, OCTAs, corneal topography scans, and other pieces of information, which in the past were stored locally on each device, are now automatically backed up to a central data archive that can also be accessed from each machine or any workstation in the office.

CASES: VALUE OF MULTIMODAL IMAGING

Case 1 demonstrates the value of multimodal analysis (Figure 1). We see a combination of OCT thickness mapping, which demonstrates diabetic macular edema in a previously quiet eye. With such an irregular macula, a photograph alone might not provide this information.

In case 2, the patient has 20/20 visual acuity but reports some metamorphopsia (Figure 2). The macula is

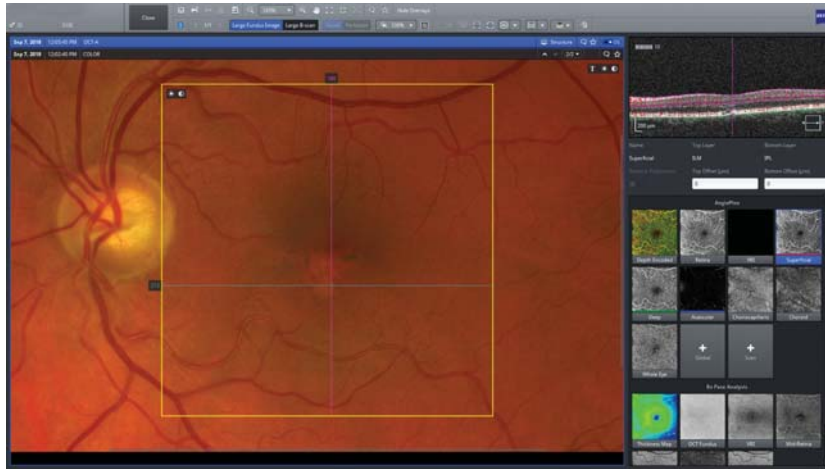


Figure 2. Case 2: Combining photographs and OCT enables visualization of the fundus in vivo and the B-scan to ascertain the level of damage to the underlying retinal structures.

irregular. Combining photographs and OCT enables us to visualize the fundus in vivo in the primary window at center and review the B-scan located at the top right of the image to ascertain

the level of disruption or damage to the underlying retinal structures.

Each figure for case 3 (Figures 3 and 4) shows a fundus image with overlying blood flow and structural OCT

analysis (side-by-side). To my knowledge, no other technology in the world can provide this analysis. Being able to coordinate blood flow and retinal structure is a dynamic educational tool and provides clinicians with an integrated clinical data set they could have only dreamed of. This enhances detection and may one day soon provide us with predictive values that will help us intercept a disease before it begins. ■

AARON E. LECH, OD

- ClearVue Eye Care, Roseville, California
- drlech@clearvue.org
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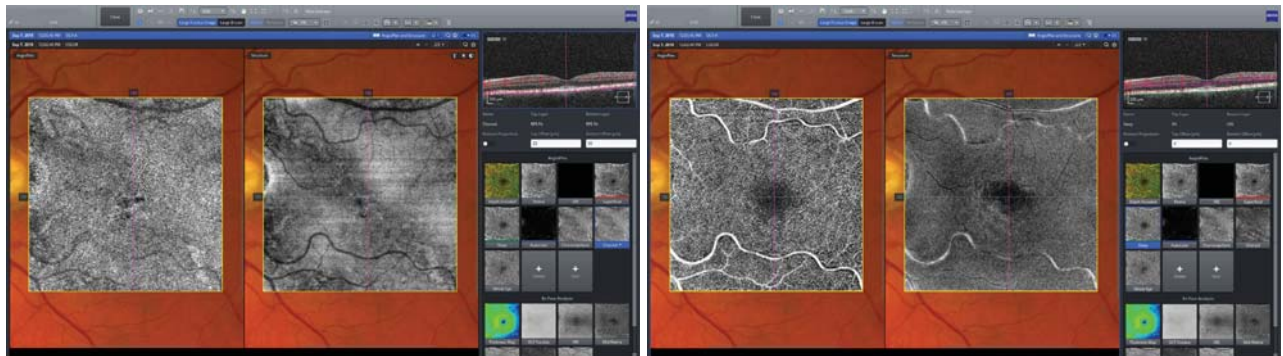


Figure 3 and Figure 4. Case 3: Fundus images with overlying blood flow and structural OCT analysis.