

# ADVANCED RETINAL IMAGING SUPPORTS COMPLEX CASES

A hospital clinic has come to rely on the iCare EIDON Ultra-Widefield Module for monitoring retinal pathologies.



By David Sarraf, MD

**A**s a retinal specialist and professor at the Stein Eye Institute at UCLA, I see patients who have been referred by ophthalmologists and other retina specialists. We care for a spectrum of diseases that tend to be complex in nature at my tertiary care teaching facility.

By far and away, the most common cases we deal with in the clinic are AMD patients in intermediate and late stages of disease, both geographic atrophy and neovascular AMD. However, we also see patients with rare genetic dystrophies that can be challenging to identify and follow. Advanced retinal imaging has become indispensable in our ability to diagnose and manage these less common pathologies and care for the patients who present with them.

## A “WONDERFUL RESOURCE”

The iCare EIDON imaging system my facility acquired several years ago quickly offered us a wonderful resource to illuminate a wide range of common and less common retinal conditions. Our iCare EIDON Ultra-Widefield (UWF) Module, which offers up to 200° of superior image quality, produces strikingly clear images of the macula and the peripheral retina. We have come to depend on the system’s wider field of view, coupled with its TrueColor Confocal Technology offering exceptionally high resolution and color contrast, to help us manage especially challenging cases. The ease of acquiring images with this device adds another layer of benefit.

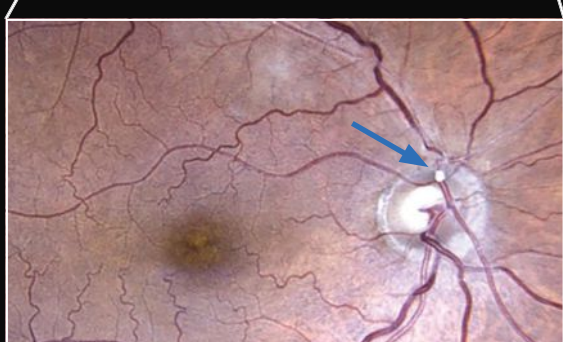
The iCare EIDON UWF offers us essential information on

## CASE #1: BRANCH RETINAL ARTERY OCCLUSION

FIGURE 1



FIGURE 1A



**Figure 1.** Without the proper contrast and resolution offered by our iCare EIDON UWF, we might have overlooked the retinal whitening indicating the distribution of ischemia and infarction. **Figure 1A.** A closer look reveals the culprit, a plaque, causing non-perfusion and ischemic whitening of the retina.

**T**his case of branch retinal artery occlusion was interesting because the ischemic infarction, located in the macula, showed very subtle changes. Without the proper contrast and resolution offered by our iCare EIDON UWF, we might have overlooked the retinal whitening indicating the distribution of ischemia and infarction. The iCare EIDON UWF helped to capture that wedge of ischemia, or infarction, that was distal to the exact point of arterial occlusion, which helped us to arrive at the diagnosis.

The imaging system also enabled us to identify the culprit embolus, or plaque, causing the non-perfusion and ischemic whitening of the retina. In these patients, the BRAO diagnosis is a critical part of the systemic work-up. Determining the source of the embolus, which we identified in the retina with the aid of our iCare EIDON UWF, helped us to make the final diagnosis.

peripheral pathology and macular lesions for common disorders such as AMD, diabetic retinopathy, and diabetic macular edema. The peripheral view is particularly important in diabetics as it helps us to identify more occult retinopathy. This wider field of view also can highlight a broader area of retinal degeneration, neovascular complications, and pattern of changes—insights contributing to our ability to accurately diagnose patients with the disease and assess the status of their progression. At the Stein Eye Institute, we also find the iCare EIDON UWF’s ability to help us uncover less common disorders and dysfunction, along with issues such as pentosan polysulfate sodium toxicity, extremely valuable.

### A DEVICE TO HELP MANAGE RARE GENETIC DYSTROPHIES

In addition to our iCare EIDON UWF Module, our iCare EIDON AF has been an invaluable asset in helping us manage cases of rare genetic dystrophies. In these kinds of cases, identifying

the pattern of maculopathy is a core component to making the diagnosis and monitoring the patients. The color contrast and resolution offered by the iCare EIDON imaging system has improved our ability to identify phenotypes so we can more reliably target them and pinpoint causative genes. The ability to view the macular pattern of atrophy and disruption has helped us to diagnose members of our patient families with mitochondrial maculopathy, as well as to phenotype them and track their disease progression.

Moreover, our iCare EIDON AF has assisted us in identifying hyperfluorescent flecks and peripapillary sparing in Stargardt’s disease. Those elements need to be confirmed to successfully diagnose the autosomal recessive retinal dystrophy. Our iCare EIDON AF Module also has given us an efficient way to identify geographic atrophy and AMD patients, and monitor their disease progression. Undoubtedly, our iCare EIDON imaging system has offered my hospital clinic an excellent return on investment for all of the reasons mentioned.

## CASE #2: STARGARDT’S DISEASE

FIGURE 1

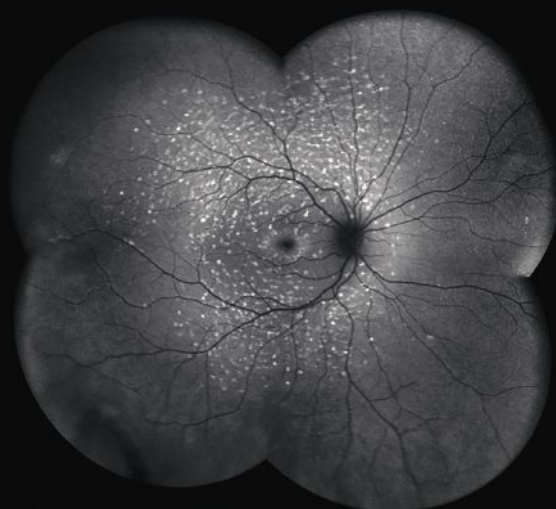


FIGURE 1A



**Figure 1.** The iCare EIDON Ultra-Widefield AF Module revealed a pattern of hyperfluorescent flecks extending into the periphery consistent with Stargardt’s. **Figure 1A.** EIDON UWF reveals in color the extent of this disease across the retina.

In this case of Stargardt’s disease, the wide field of view with the iCare EIDON UWF Module played a pivotal role in our evaluation because it revealed the pattern of hyperfluorescent flecks that radiated into the periphery. We also used our iCare EIDON AF to better highlight the

pattern of the flecks, along with the evidence of peripapillary sparing, which are vital components in making the final diagnosis for this disease. Our iCare EIDON imaging system was an integral part of determining that this was indeed Stargardt’s disease.