

## Clinical Benefits of Mirante

### Using the Mirante Scanning Laser Ophthalmoscope to follow retinal pathologies.

Guido Ricciotti, MD, and Alexandra Miere, MD, PhD

*In March 2023, Guido Ricciotti, MD, and Alexandra Miere, MD, PhD, won the 3rd Annual NIDEK IMAGEs OF THE YEAR Award for the images they captured with the Mirante Scanning Laser Ophthalmoscope (NIDEK) of the eyes of a 93-year-old male patient with age-related macular degeneration (AMD) and primary open-angle glaucoma (POAG) (access the article [here](#)). This article describes the most recent follow-up of the same patient's case, as well as another case in which the imaging capabilities of the Mirante contributed significantly to diagnosis and ongoing treatment.*

#### **CASE 1: AGE-RELATED MACULAR DEGENERATION AND PRIMARY OPEN-ANGLE GLAUCOMA**

At Centre Hospitalier Intercommunal de Créteil (France), we have been following a 93-year-old male patient since 2009 who has progressive AMD and POAG. At his first visit, the patient's BCVA was 20/25 OD and 20/40 OS. Despite receiving intravitreal anti-VEGF injections, the patient's macular atrophy has worsened.

#### **RECENT FOLLOW-UP**

Our most recent follow-up visit with this patient took place in October 2023, after he had undergone bilateral cataract surgery. The surgery did not significantly improve his visual acuity (his BCVA remained unchanged). Furthermore, there was little change to his clinical presentation except for a slight enlargement of the macular atrophy. The atrophy was clearly visible with Retro mode and multicolor imaging performed using the Mirante Scanning Laser Ophthalmoscope (Figure 1).

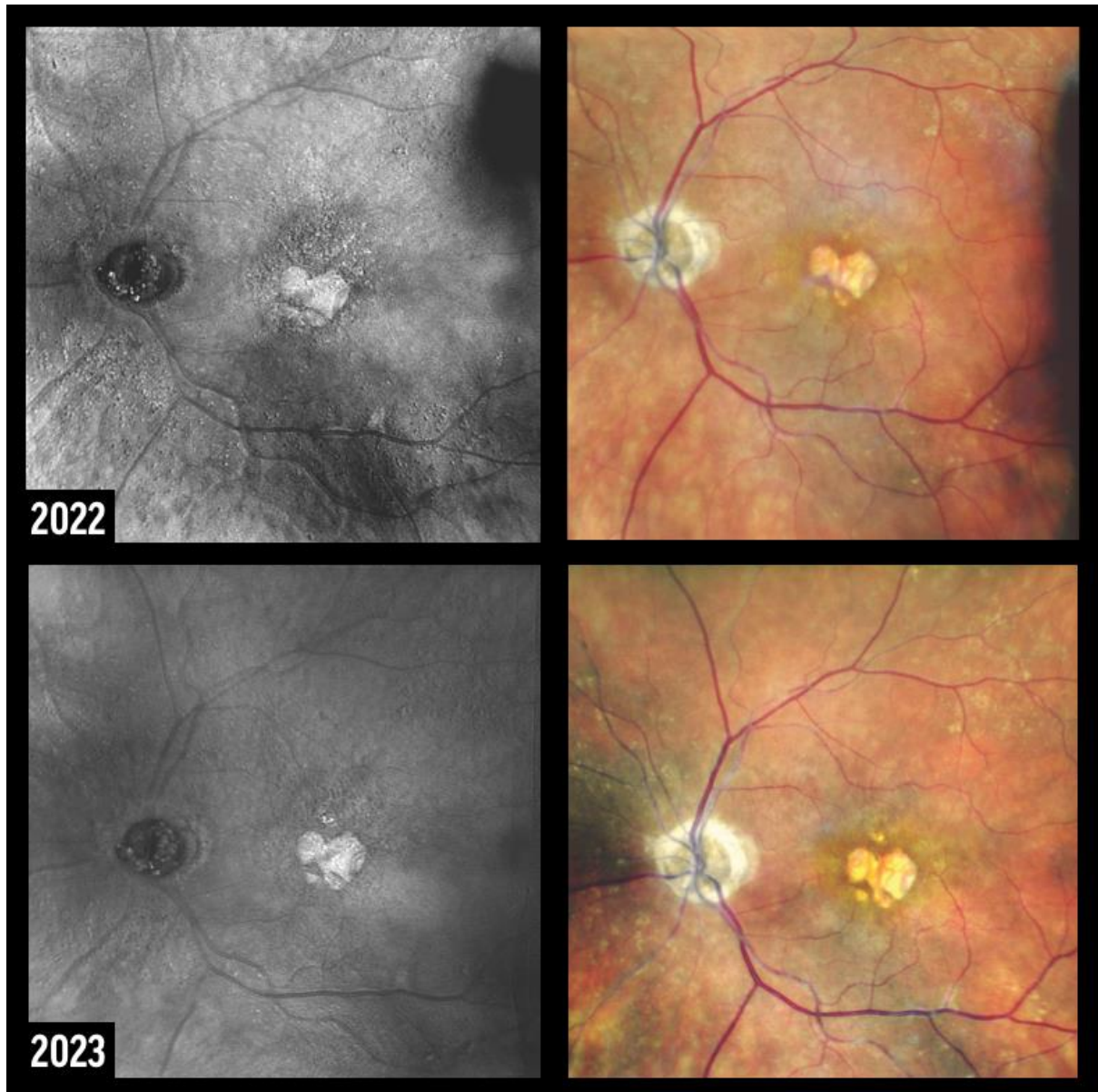


Figure 1. Images of macular atrophy in the left eye of a 93-year-old patient taken in 2022 (top) and 2023 (bottom). The photos were captured with the Mirante Scanning Laser Ophthalmoscope (NIDEK) using Retro mode and multicolor imaging. Retro mode is a unique, noninvasive imaging technique clinicians may use to represent chorioretinal pathologies in pseudo-3D appearance.

## **CASE 2: CHRONIC CENTRAL SEROUS CHORIORETINOPATHY**

This is the case of a patient followed in our center for a chronic central serous chorioretinopathy for 2 years. During this time, the patient received photodynamic therapy and intravitreal anti-VEGF injections for treatment of neovascular complication. There has been no resolution of the disorder. We

have performed multimodal imaging of this patient's eyes using the Mirante, including Retro mode, fundus autofluorescence (FAF), and multicolor imaging (Figure 2).

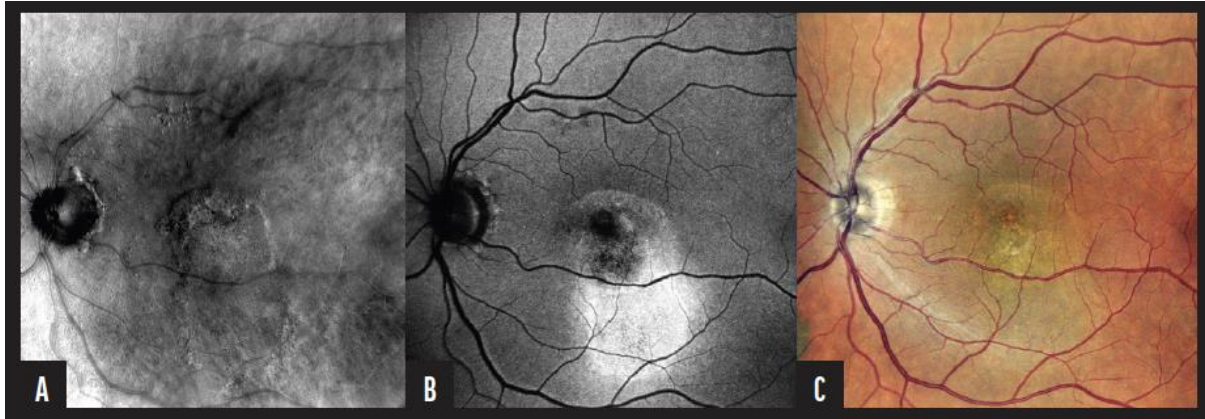


Figure 2. In an eye with chronic central serous chorioretinopathy, anti-VEGF injections have failed to resolve a neovascular complication, as seen on Retro mode (A), FAF (B), and multicolor imaging (C).

We find the Retro mode on the Mirante particularly helpful with viewing chronic central serous chorioretinopathy, because it nicely highlights alterations of the retinal pigment epithelium—the shape and particularly the borders of the gravitational epitheliopathy are clearly visible. This imaging technique also enables us to identify some findings around the superior nasal vascular arcade and in the peripapillary area that are not visible with multicolor imaging.

## CLINICAL BENEFITS OF THE MIRANTE

The Mirante is a very useful device to have in the clinic, because it performs comprehensive multimodal imaging. With a single device, we can capture OCT, OCTA, and FAF in standard field; and multicolor, Retro mode, and angiograph in ultra-wide field. In addition, it is the only device that offers Retro mode imaging. We recently published two articles about the possible clinical uses of the Retro mode: a photo essay in which we applied the technique to optic disc drusen,<sup>1</sup> and another in which we viewed “comet lesions” in pseudoxanthoma elasticum.<sup>2</sup> We hope to continue using the Mirante to discover interesting presentations of ocular pathologies.

OCT-A is not available in the United States.



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