

Scott Cousins, M.D.
Duke Center for Macular Diseases
Duke University Eye Center

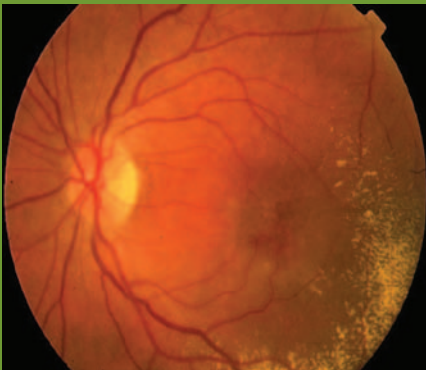
Update on Indocyanine Green Angiography

**WHAT IS THE DIAGNOSIS? HOW WOULD YOU TREAT?
WHAT IS THE PROGNOSIS?**

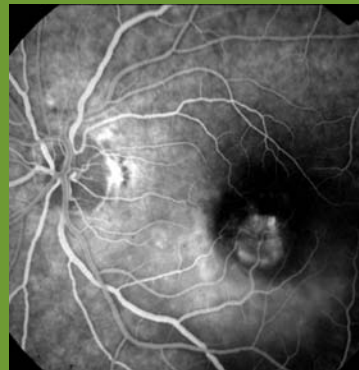
Case Presentation

Both patients presented with similar history. They had neovascular age-related macular degeneration (AMD) diagnosed within the last 6 months, received a single session of photodynamic therapy (PDT) with short term response. However, each eye recurred before 3 months. Vision was 20/200 in each case.

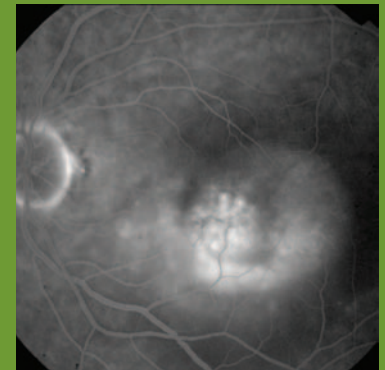
Case #1



Color Fundus Photograph

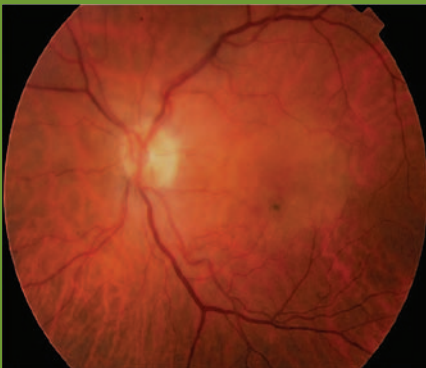


Early-phase Fluorescein Angiogram



Late-phase Fluorescein Angiogram

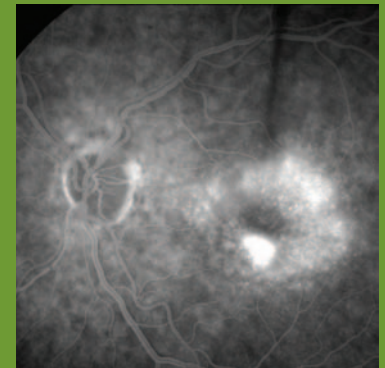
Case #2



Color Fundus Photograph



Early-phase Fluorescein Angiogram

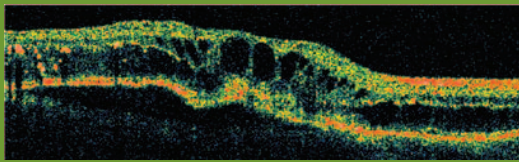


Late-phase Fluorescein Angiogram

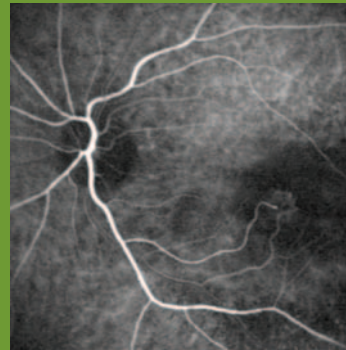
Clinical Course

High speed video (ICG) indocyanine green (IC-GREEN®, Akorn, Inc.) was performed using the Heidelberg Retina Angiograph (HRA). In case #1, high speed video ICG revealed stage 2 retinal angiomatous proliferation (RAP) mimicking classic choroidal neovascularization (CNV) associated with serous pigment epithelial detachment (PED). The neovascular complex clearly fills from the retinal circulation. The patient was treated with anti-VEGF (vascular endothelial growth factor-A) therapy with resolution of leakage and PED, and vision improved to 20/60.

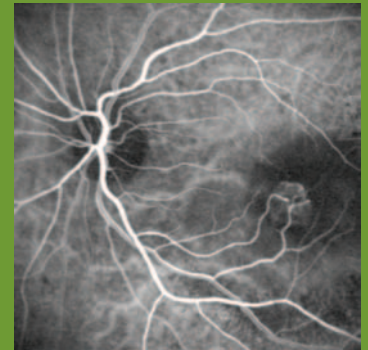
Case #1



Optical Coherence Tomography (OCT)



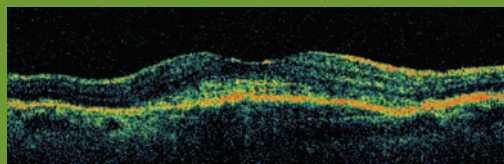
High Speed Video ICG Angiography at 21.1 Seconds



High Speed Video ICG Angiography at 21.8 Seconds

In case #2, high speed video ICG angiography demonstrated findings typical for fibrovascular PED demonstrating a large choroidal feeder complex (red arrow) perfusing a large mature vascular complex (dotted line). This eye was treated with photodynamic therapy (PDT) followed by anti-VEGF therapy, but had no vision improvement.

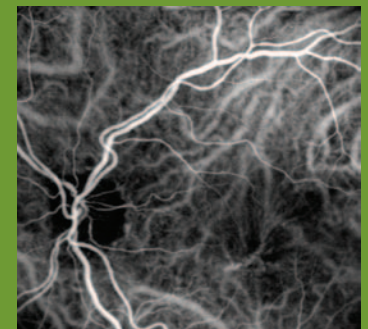
Case #2



Optical Coherence Tomography (OCT)



High Speed Video ICG Angiography at 21 Seconds



High Speed Video ICG Angiography at 22.5 Seconds

Commentary

These two cases illustrate the utility of high speed video ICG angiography in distinguishing between RAP and CNV. RAP is a very aggressive form of neovascular AMD that originates within the retina. It is highly sensitive to anti-VEGF therapy, but often requires monthly injections to suppress leakage.

Many cases of minimally classic CNV within fibrovascular PED resemble RAP. In these cases, the neovascularization originates in the choroid. These lesions are variably sensitive to anti-VEGF therapy, and combination with PDT or other therapies is often required.