SURVEY OF OPHTHALMOLOGY VOLUME 52 • NUMBER 5 • SEPTEMBER–OCTOBER 2007

AFTERIMAGES

ANDREW HARRISON AND MICHAEL LEE, EDITORS

Treatment of Co-existent Occult Choroidal Neovascular Membrane and Macular Hole

Rishi P. Singh, MD, and Peter K. Kaiser, MD

Cole Eye Institute, Cleveland Clinic Foundation, Cleveland, Ohio, USA

Abstract. The co-existence of a macular hole and a choroidal neovascular membrane can represent a diagnostic and therapeutic dilemma. In this noncomparative case report, we report on a patient with co-existent macular hole and choroidal neovascular membrane. The patient initially was found to have an occult choroidal neovascular membrane. The patient was not treated and the vision remained stable for almost 1 year until the patient noted further visual decline. The patient was treated with intravitreal pegaptanib and the patient's vision remained stable for 6 months. However, on follow-up the patient presented with visual decline and a full thickness macular hole was confirmed by optical coherence tomography (OCT). The patient underwent repair and vision improved with closure of the macular hole. The occult choroidal neovascular membrane remained stable with no evidence of disease progression. Fundus photos, intravenous fluorescein angiograms, and OCT were obtained before and after therapy and confirmed the diagnosis. This report highlights how the detection of co-existent macular hole and choroidal neovascular membrane may require OCT scanning. When treatment is entertained, therapy should be directed first toward the neovascular complex and then to repair the macular hole. (**Surv Ophthalmol 52**:547–550, 2007. © 2007 Elsevier Inc. All rights reserved.)

Key words. choroidal neovascular membrane • macular degeneration • macular hole • pars plana vitrectomy • photodynamic therapy

The formation of a macular hole is thought to originate from abnormalities of vitreoretinal interface whereby the posterior hyaloid unusually separates, causing full-thickness breaks within the sensory retina. Macular holes are associated with a variety of complications including formation of cystoid macular edema, visual field defects, retinal pigment epithelial abnormalities, retinal detachments, and the development of choroidal neovascular membranes.[1,2,4–8] Macular hole repair with pars plana vitrectomy, elevation of posterior hyaloid, with or without internal limiting membrane peeling, and placement of a long acting gas is usually successful in anatomic hole closure.[4]

The therapeutic dilemma of managing choroidal neovascular membranes (CNV) after full-thickness macular holes has been documented previously. Reports specifically evaluating treatment of macular holes after the development of CNV have shown dismal visual results and no consensus regarding treatment has been reached.[3,9–11] The goal of this article is to present the characteristics, interventions, and outcomes of a case of a stage III macular hole with a pre-existent subfoveal CNV and to

0039-6257/07/$–see front matter
doi:10.1016/j.survophthal.2007.06.005

highlight the use of optical coherence tomography (OCT) to secure the diagnosis.

Case Report

A 75-year-old woman presented for a third opinion complaining of decreased vision in her left eye for several months. Her past ocular history was significant for cataracts OU, exudative age-related macular degeneration (AMD) with five total treatments of photodynamic therapy OD, and nonexudative AMD changes OS. On examination, her best corrected acuity was 20/400 with eccentric fixation OD and 20/32 OS. Dilated funduscopic examination revealed a disciform scar OD and retinal pigment epithelial changes, drusen, and an epiretinal membranes OS. Linear cross-hair scans of the OCT showed evidence of tangential posterior hyaloidal traction, and subretinal pigment epithelial (RPE) fluid consistent with an occult CNV (Fig. 1).

With the excellent visual acuity and lack of documented disease progression, observation was suggested; however, 3 months later, the patient returned with visual acuity decline in the left eye to 20/50. Fluorescein angiography (FA) confirmed the presence of a subfoveal occult with no classic choroidal neovascular membrane measuring approximately 1 MPS disc areas in size (Fig. 2).

Treatment with photodynamic therapy was deferred by the patient and instead pegaptanib sodium injections were begun. The patient received a total of three injections at 6-week intervals. During one of her subsequent follow-up examinations 6 months after the initiation of pegaptanib injections, the patient noted a significant decline in her left eye to 20/100. Dilated funduscopic examination showed no interval change. However, OCT found the presence of a subfoveal pigment epithelial detachment with a central full thickness stage III macular hole (Fig. 3). The patient underwent combined

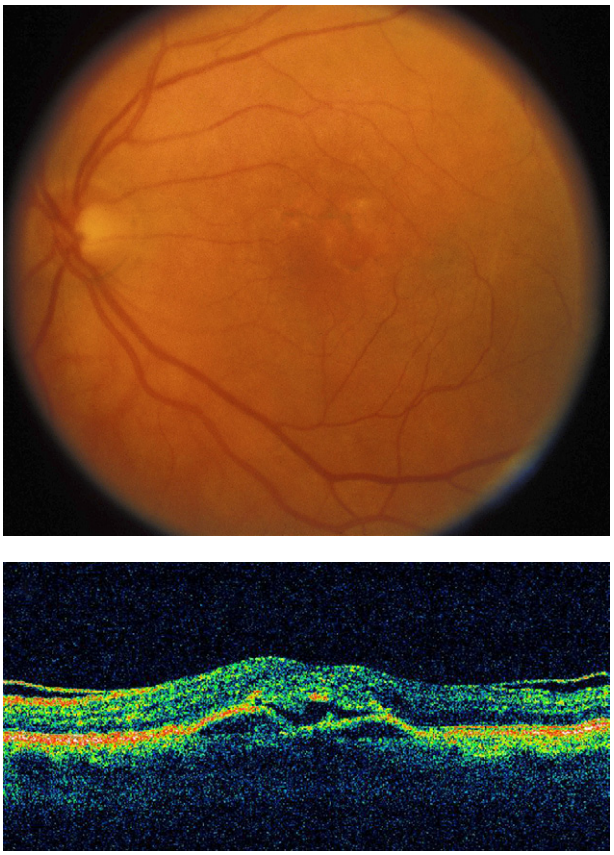

Fig. 1. Left: Fundus photos at presentation demonstrating retinal pigment epithelial changes, drusen, and an epiretinal membranes. *Right:* Linear cross-hair OCT scan demonstrating occult with no classic CNV and pigment epithelial detachment with epiretinal traction.

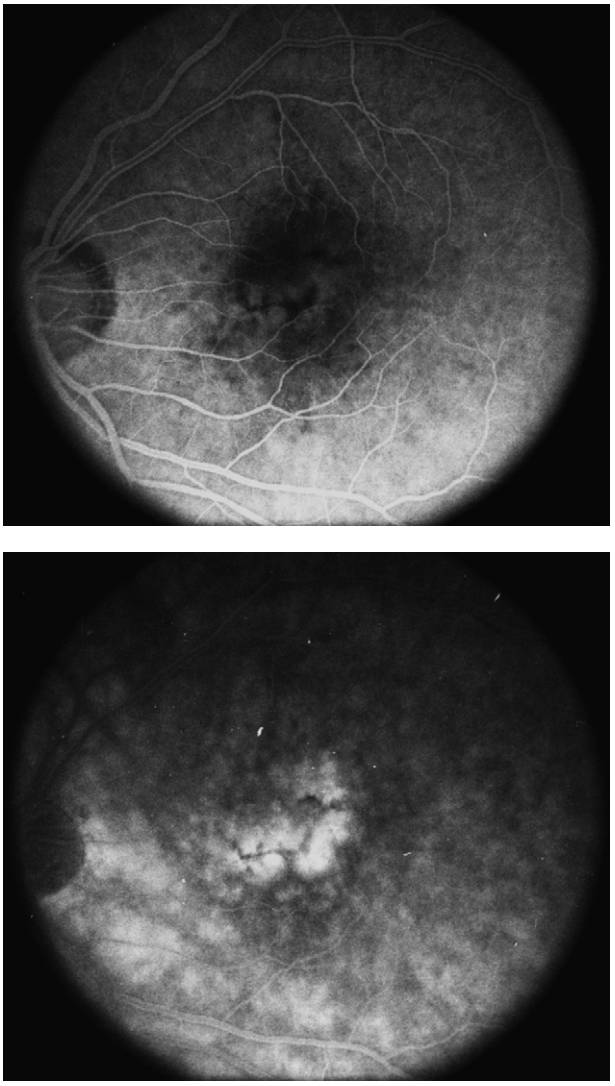

Fig 2. Early (*left*) and late (*right*) phase angiogram demonstrating occult with no classic choroidal neovascular membrane.