A 38-Year-Old White Male with "Distorted Circle" in His Left Eye

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Introduction:

A 38-year-old myopic Caucasian man was referred to The Retina Institute complaining of a "distorted circle" in his left eye. His past medical history was remarkable for Type II diabetes for which he was on metformin only. His symptoms started two weeks prior to presentation and he denied having any similar episodes previously. He did not report any recent viral or systemic illnesses coinciding with his visual symptoms.

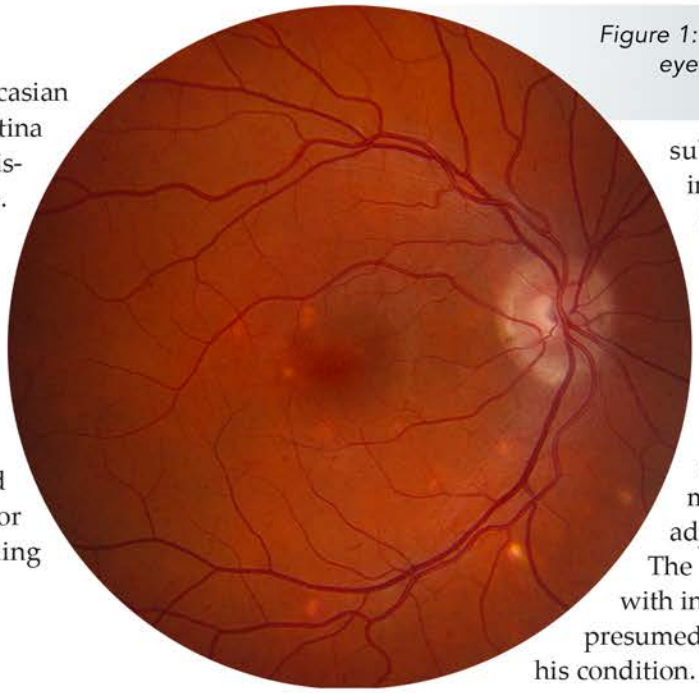
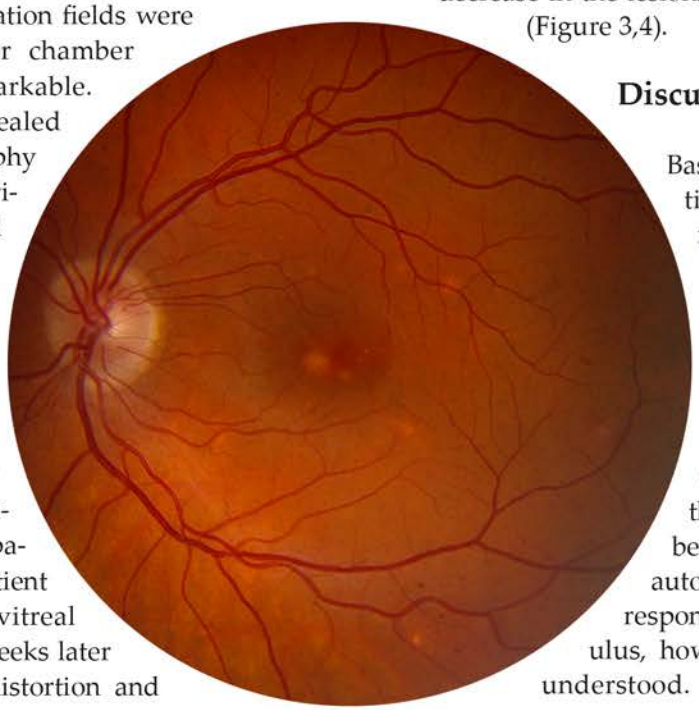


Figure 1: Fundus photograph of both eyes with multiple, yellow-white chorioretinal lesions

Exam:

On exam, corrected visual acuity in both the right and left eye was 20/20. Confrontation fields were full in both eyes. Anterior chamber examination was unremarkable. Fundus examination revealed bilateral peripapillary atrophy with focal, yellow-white chorioretinal scars scattered throughout the posterior pole (Figure 1). A subretinal neovascular complex was identified in the left eye and confirmed on angiography. A diagnosis of presumed ocular histoplasmosis versus multifocal choroiditis/punctate inner choroidopathy was made and the patient was treated with intravitreal avastin. He was seen four weeks later with improvement in his distortion and subsequently treated with intravitreal avastin three additional times in the left eye, with stable vision and symptoms. Eight months after initial diagnosis the patient presented again with new, mildly distorted vision in his right eye. OCT demonstrated multiple pigment epithelial detachments adjacent to the fovea (Figure 2) The decision was made to treat with intravitreal Triesence given the presumed inflammatory component of his condition. Following this treatment, his distortion improved and there was a noted decrease in the lesions seen clinically and on OCT (Figure 3,4).



Discussion:

Based on the clinical presentation and exam findings, the most likely diagnosis is punctate inner choroiditis (PIC). Originally diagnosed by Watzke and colleagues in 1984, PIC is an idiopathic inflammatory disorder that typically affects myopic Caucasian women between the ages of 29 and 45[1,5]. It has been proposed that PIC is an autoimmune disease arising in response to an environmental stimulus, however the etiology is poorly understood. Patients present with a

variety of nonspecific visual complaints including metamorphopsia, paracentral scotomas, and photopsias[8]. The inflammatory lesions arise in the retinal pigment epithelium and inner choroid, and are most commonly isolated to the posterior pole. They are small (100-300 microns), well defined, and appear randomly scattered, rarely extending beyond the equator. Unlike multifocal choroiditis/panuveitis there is no concurrent vitritis. The lesions progress to atrophic scars, leaving a halo of pigmentation and are typically deeper and more punched out than those seen in multifocal choroiditis. Choroidal neovascularization is a common complication with nearly 80% of patients presenting with a neovascular complex at presentation[2,3].

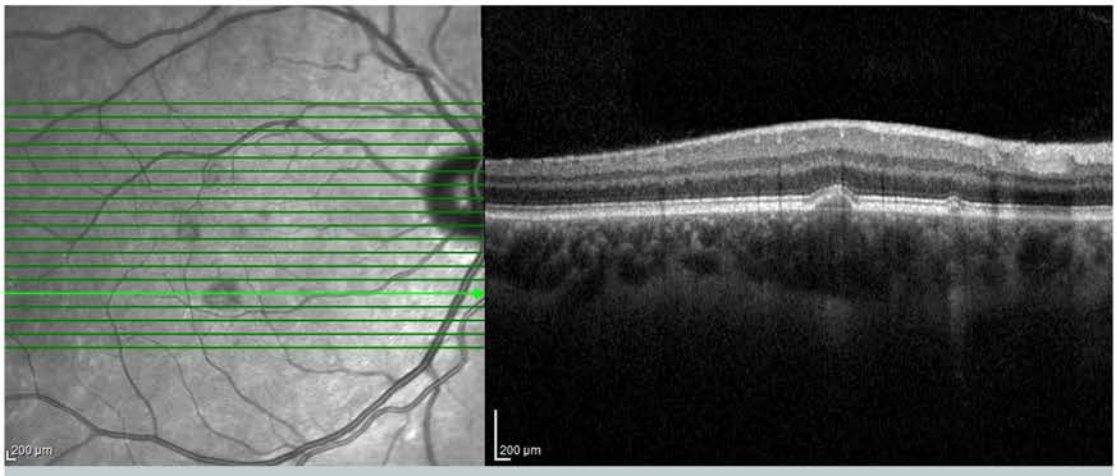


Figure 2: OCT with small pigment epithelial detachment

Fluorescein angiography of PIC demonstrates early hyperfluorescence with late staining of atrophic lesions. Indocyanine green shows mid phase hypofluorescence presumably corresponding to choroidal hypoperfusion in the lesions seen clinically and on fluorescein. Dilated choroidal capillaries may also be seen around the hypofluorescent spots. OCT demonstrates lesions with RPE elevation that fluctuate with disease activity and may show sub RPE hyper-reflective signals with intact Bruchs membrane[5]. Spaide et al. identified instances of rupture of the RPE elevations, resulting in infiltration of inflammation in the outer retina[7]. This may complicate treatment as it is possible for inflammation to be mistaken for a neovascular process resulting in the use of anti-angiogenic medications in the absence of angiogenesis. Fundus autofluorescence reveals hypo autofluorescent spots with a hyperautofluorescent rim that fades as the lesions regress.

PIC has a favorable visual prognosis compared to MCP, particularly in eyes without choroidal neovascularization involving the fovea[6]. Treatment options include observation for inactive, visually asymptomatic disease to intravitreal or systemic steroids for active inflammatory lesions[4]. Choroidal neovascularization is managed with intravitreal anti-VEGF, laser or photodynamic therapy.

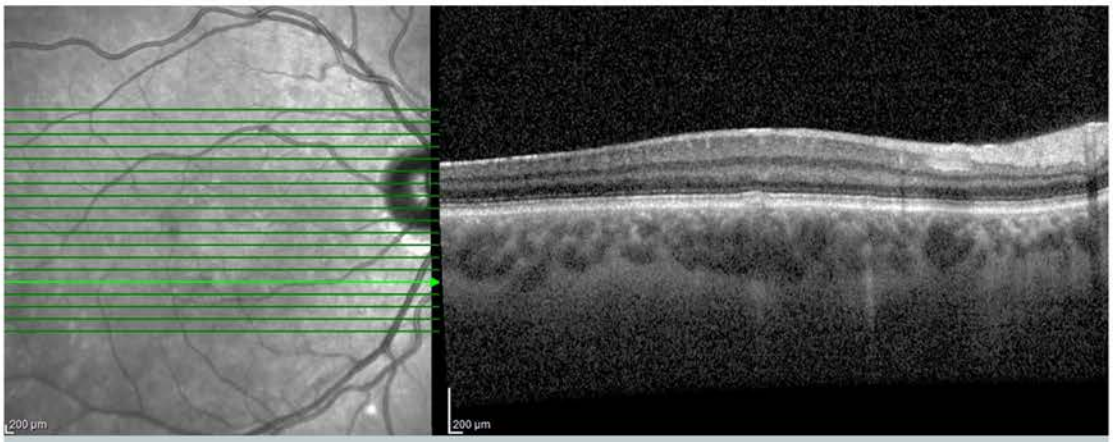
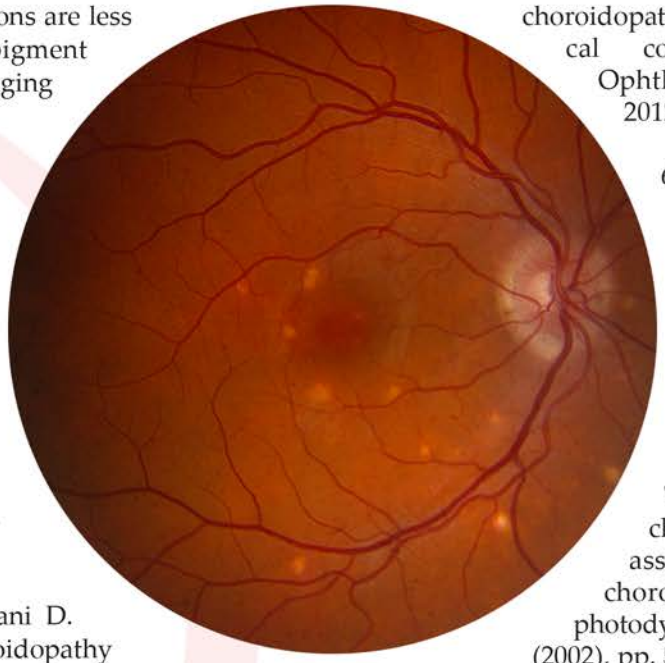


Figure 3: OCT with near resolution of outer retinal elevation following intravitreal Triescence.

Conclusion:

Our patient has been successfully managed with a combination of anti-angiogenic treatment for his choroidal neovascularization, and intravitreal steroids for active inflammation. He retains 20/20 visual acuity in each eye with mild stable distortion. The

inflammatory outer retinal lesions are less prominent and the retinal pigment epithelial elevation seen on imaging have decreased in size.



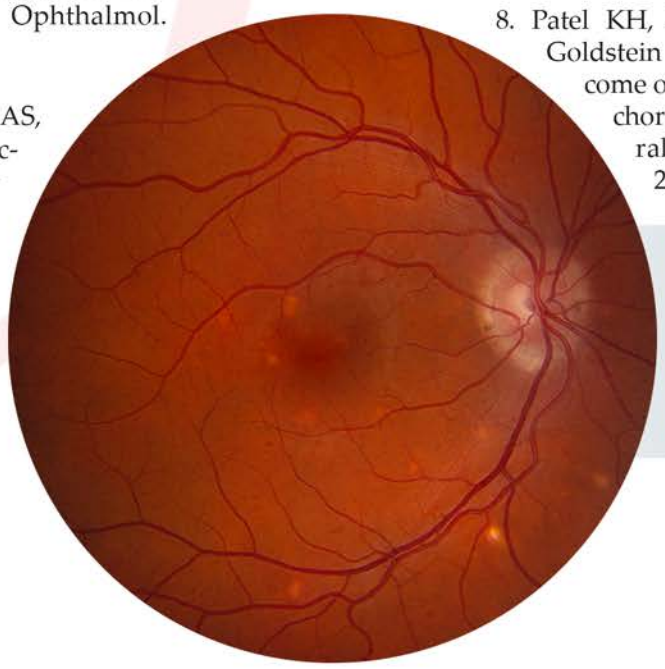


Figure 4: Before and after fundus photographs of the right eye following intravitreal Triescence

References:

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