Punctate Inner Choroidopathy in a Young Filipino Female: A Case Report

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ABSTRACT

A 30-year-old, monocular myopic female consulted for new onset scotoma on her left eye. Best corrected visual acuity was 20/20 for the left eye. Fundus exam revealed a hypopigmented lesion in the inferior juxtafoveal area with no overlying vitreous reaction/opacity. Spectral domain optical coherence tomography (SD-OCT) showed focal disruption and elevation of the inner choroid and retinal pigment epithelium (RPE), indicating punctate inner choroidopathy (PIC). OCT angiography (OCT-A) revealed the presence of a choroidal neovascular membrane (CNV) on RPE-RPE fit segmentation. The CNV and lesion resolved upon treatment with one intravitreal bevacizumab injection and oral prednisone 60 mg (1.2 mg/kg body weight) per day tapering over 2 months.

This is the first reported case of PIC in a Filipino that was diagnosed and treated with the guidance of high-resolution SD-OCT and OCT-A. These diagnostic tests proved useful in identifying the lesions based on cross-sectional views of the retina, RPE and choroid.

Keywords: punctate inner choroidopathy, choroidal neovascular membrane, spectral domain optical coherence tomography, OCT angiography

INTRODUCTION

Punctate Inner Choroidopathy (PIC) is an idiopathic inflammatory disorder first described by Watzke et al. in 1984.[1] Commonly found in young women (mean age 32 years),[2] the lesion is characterized as small (100-200 microns), yellow-white (hypopigmented), and deep with no overlying inflammation/vitritis. Although most cases have a benign course, there are instances of vision loss due to formation of choroidal neovascularization (CNV) and sub-retinal fibrosis.[3]

On spectral domain optical coherence tomography (SD-OCT), the lesions are characterized by retinal pigment epithelium (RPE) elevation, sub-RPE signal, and discontinuity over an intact Bruch's membrane (BM).[4]

OCT angiography (OCT-A) has been used as a non-invasive alternative to fluorescein angiography (FA) to identify the presence of choroidal neovascular membrane (CNV) in PIC.[5] Hyperflow lesion on OCT-A in PIC indicates the presence of a CNV.

A thorough search of local and international publications resulted in no reported cases in the Philippines. A case series was published by a Philippine institution-based author, but the patients reported were from Spain.[6] This is the first reported case of PIC in a Filipino female.

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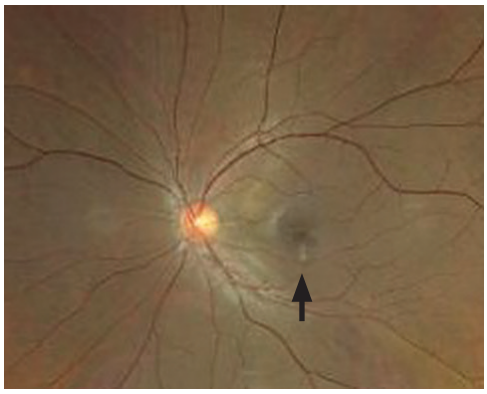

Figure 1. Fundus photo of the left eye showing a linear hypopigmented parafoveal lesion *(black arrow)*.

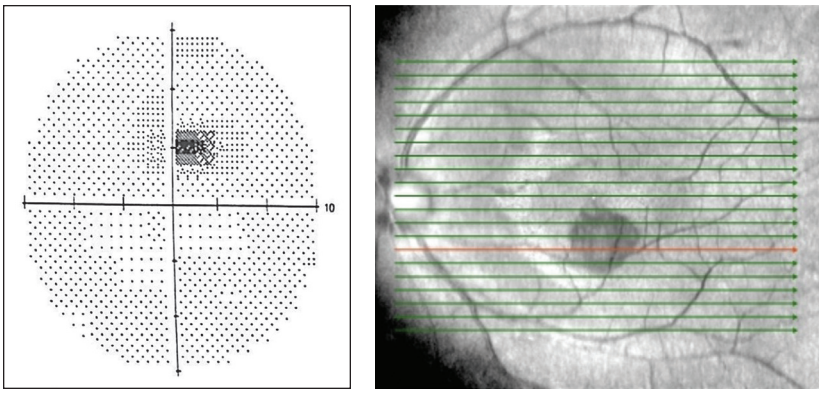

Figure 2. Central 10-2 showing superior paracentral scotoma.

CASE PRESENTATION

A 30-year-old female came in with a 6-day history of scotoma on the left eye. Her other eye was enucleated at a young age due to trauma.

Upon examination, distance acuity was 20/150 corrected to 20/20 with a refraction of -3.75 = -2.75 x 3°. Anterior chamber is deep and quiet with round reactive pupil and a clear lens and cornea. Fundus examination showed a hypopigmented linear spot in the inferior juxtafoveal area (Figure 1). There was no vitreous reaction/opacity.

Humphrey 10-2 showed a superior scotoma (Figure 2) not involving fixation. SD-OCT of the macula showed focal disruption and elevation of the inner choroid and RPE with inward displacement of the overlying retinal layers in the inferior juxtafoveal section (Figure 3). OCT Angiography (OCT-A) revealed hyperflow signals at area of the lesion on RPE-RPE fit segmentation (Figure 4).

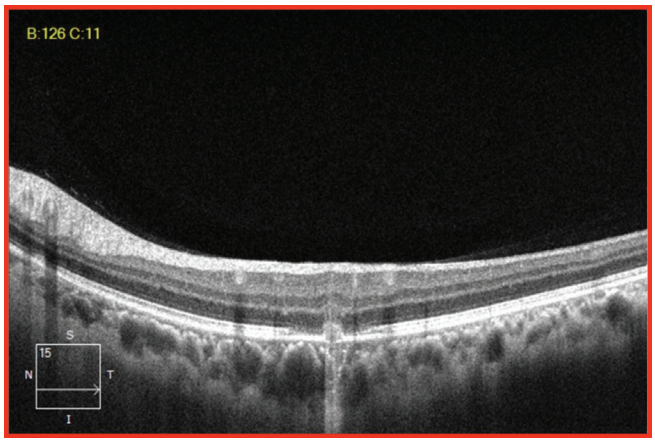

Figure 3. SD-OCT section through the lesion showing focal disruption and elevation of the inner choroid with overlying RPE and retinal layers.

TORCHS screening showed elevated IgG titers for Toxoplasma, Rubella, and CMV. TB quantiferon was also negative.

An impression of PIC with CNV was made. She underwent intravitreal bevacizumab injection on the left eye and was started on oral prednisone 60 mg (1.2 mg/kg body weight) per day with gradual tapering over two months.

Repeat OCT-A a week later showed disappearance of the hyperflow lesion on RPE-RPE fit segmentation (Figure 5) and decrease in intensity and size of the lesion on Macular OCT (Figure 6).

The lesion finally resolved forming a focal area of excavation on macular OCT (Figure 7). Best corrected visual acuity was maintained at 20/20 with decrease in the scotoma (Figure 8).

DISCUSSION

Macular lesions among young patients present a diagnostic challenge because they are rare. Considerations include macular dystrophy or inflammatory lesions, as degenerative lesions (macular degeneration) usually appear in the older age group. However, dystrophies typically affect central vision.

Inflammatory macular lesions include the white dot syndromes as well as infectious lesions.[7] The finding of a deep retinal lesion without overlying vitritis makes choroidal and RPE pathologies likely, such as acute posterior multifocal placoid pigment epitheliopathy (APMPPE), choroiditis, multiple evanescent white dot syndrome (MEWDS), and PIC. Other deep lesions include septic and metastatic choroidal emboli.[8]

PIC was the primary consideration among the differentials because of the small size of the lesion (around 100-200 microns diameter) similar to the lesions originally described by Watzke et al. Further, it commonly affects young, myopic females, fitting the profile of the patient.

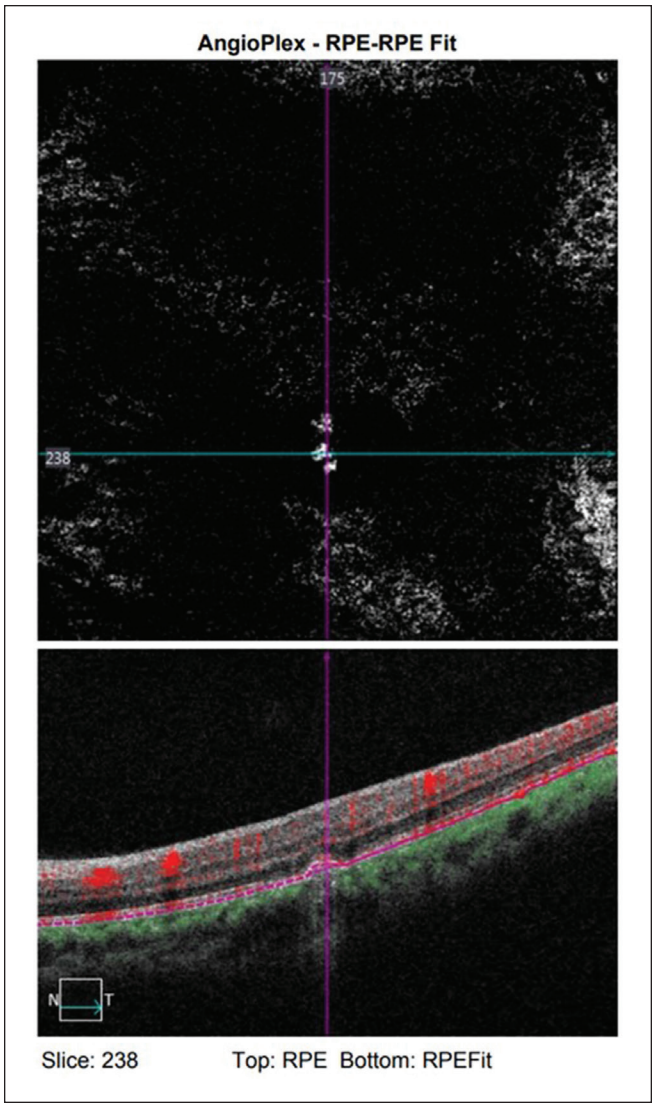

Figure 4. OCT-A through lesion in RPE-RPE fit segmentation showing focal hyperflow signal.

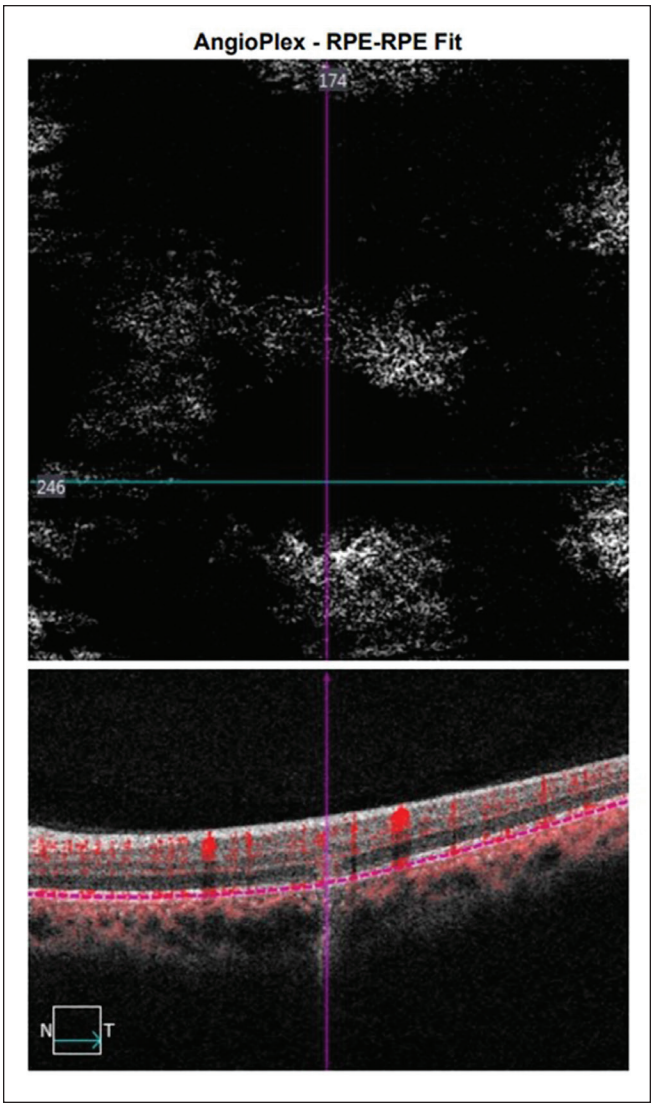

Figure 5. OCT-A through lesion in RPE-RPE fit segmentation after anti-VEGF injection.

Symptoms vary from scotomas, blurred vision, photopsia, floaters, light sensitivity, floaters, and/or metamorphopsia.[1,3] In this case, the presenting symptom was a scotoma.

SD-OCT was utilized to identify and characterize the lesion. The finding of dome-shaped RPE elevation with a homogenously reflective sub-RPE signal was similar to previous case reports.[9,10]

The close proximity of the lesion to the foveal center required quick investigation as central vision may be threatened. With the help of OCT-A, a CNV was promptly detected and treated. As with neovascular age-related macular degeneration, once CNV is detected, prompt treatment with intravitreal bevacizumab was done to prevent further visual morbidity.[10]

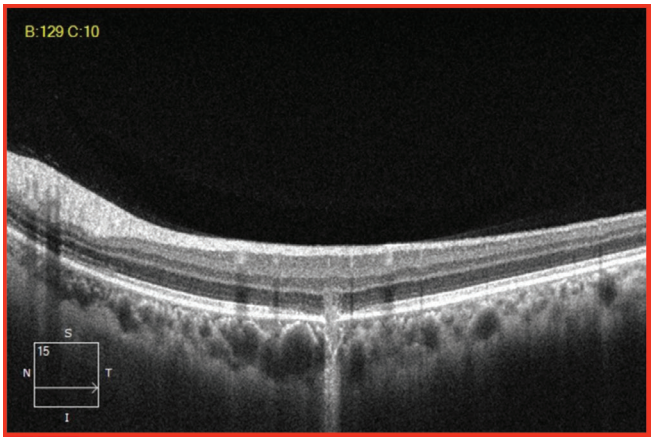

Figure 6. SD-OCT section through resolving lesion.

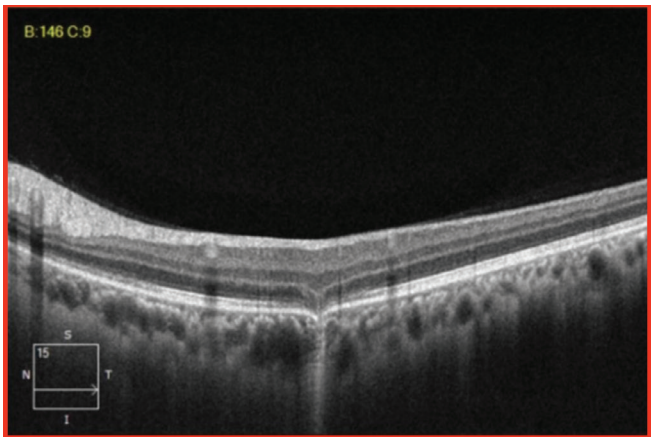

Figure 7. SD-OCT through resolved lesion.

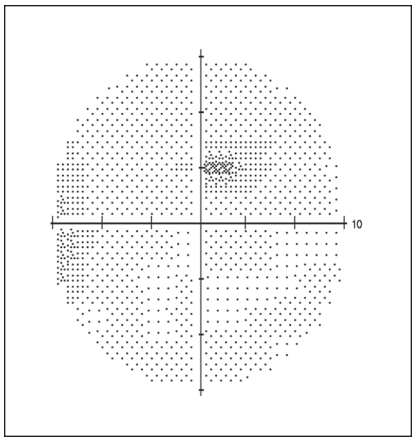

Figure 8. Central 10-2 after treatment.

CONCLUSION

A 30-year-old Filipino female was diagnosed with PIC complicated with CNV formation. SD-OCT and OCT-A were used to identify the PIC and CNV lesions, as well as to demonstrate the resolution of the lesions after treatment with oral prednisone and intravitreal bevacizumab.

Statement of Authorship

The author confirms sole responsibility for the conceptualization of work, acquisition and analysis of data, drafting and revising, and final approval of the version to be published.

Author Disclosure

The author declared no conflicts of interest.

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None.

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