Bilateral acute macular neuroretinopathy in a postpartum, otherwise healthy female: A case report

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Acute macular neuroretinopathy (AMN) is a rare, macular disorder which typically affects young women who present with paracentral scotoma in one or both eyes corresponding to red, wedge-shaped parafoveal lesions. A young female presented with the complaints of few black spots (scotomas) in her visual field, which she noticed 1 month after a full-term normal delivery. Fundus examination showed flat, well-demarcated, reddish parafoveal lesions in both eyes, corresponding to the scotoma. Optical coherence tomography (OCT) at the site of lesion showed a well-delineated defect in the reflectivity of outer retinal layer. After 6 months of follow-up, fundus lesions were noted to be fading and repeat OCT revealed the realignment of the defect in the outer retinal reflectivity.

Key words: Acute macular neuroretinopathy, optical coherence tomography, scotoma

We report a case of AMN in a postpartum female. To the best of our knowledge, such a case has not been reported before from India. We want to highlight the characteristic findings of high-resolution optical coherence tomography (OCT) which can be of great value in diagnosing such disorders.

Case Report

A 26-year-old female presented with the complaints of few black spots (scotomas) in her visual field, which she noticed 1 month after a full-term normal delivery. There was no history of prior influenza like syndrome or use of any medication.

On examination, unaided visual acuity was 20/20 in both eyes. Slit-lamp bio-microscopy was unremarkable and so were the pupillary reaction to light. Amsler’s grid examination showed a central scotoma around the fixation spot in both eyes, and was larger in the left eye.

Fundus examination by +90D bio-microscopy and indirect ophthalmoscopy revealed a well-circumscribed, bean shaped area of retinal discoloration nasal to the center of fovea in the left eye and a similar oval shaped lesion in the right eye superonasal to the center of fovea. Rest of the fundus was normal in both eyes [Fig. 1a and b].
Automated perimetry (Octopus) showed bilateral dense scotomas in areas corresponding to the macular lesions.

Fundus fluorescein angiography was unremarkable.

High-resolution spectral domain OCT showed a well-delineated defect in the reflectivity of outer retinal layer adjacent to the retinal pigment epithelium when the scan was performed through the lesions [Fig. 2a and b].

On the basis of searched literature, the condition was quite similar to bilateral AMN and we decided to keep her on observation. We followed the patient at 1-month intervals. After 6 months, she still complained of scotomas, though of reduced intensity (lighter in color). Unaided visual acuity was maintained at 20/20 in both eyes. Repeated automated field showed reduction in the density of scotomas [Fig. 3a and b]. On fundus examination, lesions were noted to be fading in color [Fig. 1c and d]. Red free photograph of the left eye with larger lesion revealed fading of the lesion even better than the colored photograph [Fig. 4a and b]. Most interesting finding was the change in the OCT which showed complete realignment of the defect to a normal reflectivity [Fig. 2c and d].

Patient is being followed up since last 18 months without further deterioration in her visual functions.

Discussion

Bos and Deutman described AMN as a rare, macular disorder of unknown etiology. It typically affects young females. Clinically, the disease presents with unilateral or bilateral, multiple paracentral scotomas corresponding to reddish, wedge-shaped parafoveal lesions. The pathogenesis of AMN remains unclear, although an acute inflammatory process or vascular disease associated with hypertension have both been proposed as the mechanism.[1,2] AMN has also been associated with oral contraceptive use, eclampsia, flu-like syndrome, epinephrine, headache and postpartum shock.[3,4] Our patient's clinical findings and her postpartum status helped us in diagnosis, although we could not elicit a history.
of postpartum shock which might not be appreciated by a rural, less educated patient. The retinal location of the lesion in patients with AMN is not clear. An early report suggested that the AMN lesion was located in the inner layers of the retina. A later report using OCT suggested the location of the lesion in the outer retina and showed realignment of layer after 3 months of follow-up.[8] High-speed, ultrahigh-resolution, spectral domain OCT enables enhanced imaging of intra-retinal morphology including photoreceptor layer. In our patient, the retinal location of the lesions was outer retinal (photoreceptor) layer adjacent to retinal pigment epithelium, which is similar to the recent reports and studies on AMN. Studies using early receptor potential and a multifocal electroretinogram pointed to photoreceptor involvement.[9] These tests, which could have strengthened our diagnosis, were not done due to unavailability at our center or nearby places. There are no treatment guidelines for AMN. So, our decision to keep the patient under observation was as per the updated literature. The resulting scotoma can persist for several years as we are observing in our patient in spite of faded fundus lesions and realignment of outer retinal layers on OCT.

To conclude, a new case of the rare AMN is described here. It occurred during the postpartum period in a young woman, showing typical clinical features. We emphasize the outer retinal layer as the primary site of the disease as shown by the OCT.

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