Orange ring sign: A novel finding on multicolor imaging in eyes with idiopathic choroidal neovascular membrane

Rupak Roy, Kumar Saurabh, Sugandha Goel

Key words: Idiopathic CNVM, infrared reflectance, multicolor imaging, near-infrared autofluorescence

Choroidal neovascular membrane (CNVM) in patients below 50 years of age without any secondary pathology is considered to be idiopathic CNVM (iCNV).[1] These membranes are usually unilateral and visual outcomes are more favorable than CNVM due to age-related macular degeneration (AMD) or myopia.[2] Multicolor imaging (MCI) is a novel noninvasive retinal imaging modality that has been described in AMD.[3] MCI of iCNV has not yet been described in the literature. Therefore, in the present study, we aimed to describe a characteristic ring sign on MCI with iCNV.

A 48-year-old female patient presented with a diminution of vision in the left eye for 1 month. Best-corrected visual acuity (BCVA) was 6/9 in the right eye and 6/60 in the left eye. Fundus [Fig. 1a] of the left eye showed a greyish membrane at the macula. Spectral-domain Optical Coherence Tomography (SD-OCT) [Fig. 1b] showed subretinal CNVM with subfoveal late leakage on fundus fluorescein angiography (FFA) [Fig. 1c]. MCI [Fig. 1d] showed a characteristic orange ring with green core. The ring was better picked up in infrared reflectance (IR) [Fig. 1e], near-infrared autofluorescence (IRAF) [Fig. 1g] as compared to blue autofluorescence (BAF) [Fig. 1f]. MCI (Heidelberg Spectralis) (30°) was obtained during OCT scanning before doing FFA.

Discussion

Lida *et al.* have described three stages of iCNV based on OCT.[4] Subsequently, Toju *et al.* reported ring-shaped hyperautofluorescence surrounding iCNV on IRAF.[5] Our case had an orange ring with the green core on MCI and corresponding to a white ring in IR. Lesions at RPE level or having high melanin content are usually picked up by IR and usually appear red or orange in composite multicolor image. Similarly, RPE proliferation which has higher melanin content led to an orange ring on MCI. Any elevated lesions appear greenish on MCI. Thus, the green core corresponded to neovascular material. Furthermore, the ring sign may act as an excellent diagnostic clue in addition to other imaging pointers. Thus, it helps in prognosticating and treatment planning if the correct diagnosis is made.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Department of Vireo-Retina, Aditya Birla SankaraNethralaya, Kolkata, West Bengal, India

Correspondence to: Dr. Rupak Roy, Aditya Birla SankaraNethralaya, 147, Mukundapur, E.M. Bypass, Kolkata - 700 099, West Bengal, India. E-mail: rayrupak@gmail.com

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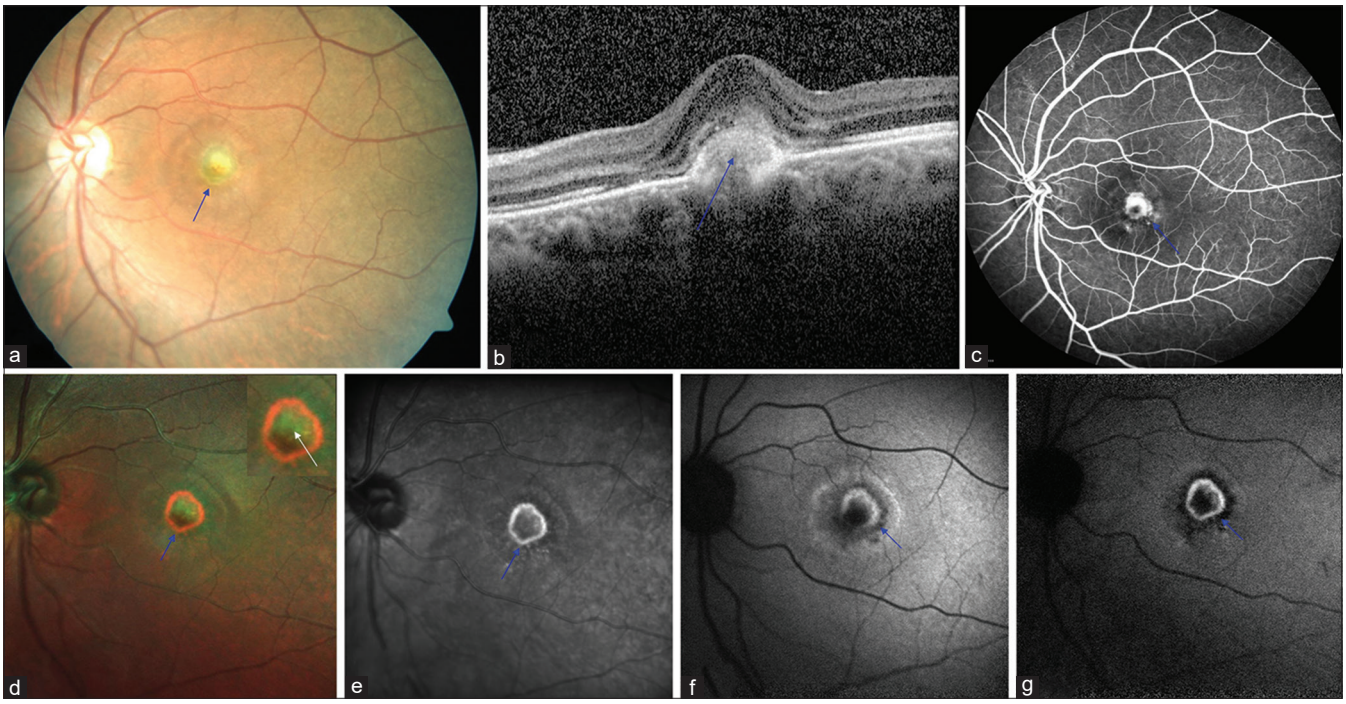

Figure 1: Color fundus photograph of the left eye showing greyish membrane at the macula (blue arrow) (a), SD-OCT line scan through the lesion (b) showing subretinal CNVM (blue arrow) with subfoveal late leakage (blue arrow) on FFA (c), Multicolor imaging (d) showing a characteristic orange ring (blue arrow) with green core (white arrow in inset) corresponding to CNVM. The ring was better picked up in infrared reflectance (e) and near-infrared autofluorescence (g) as compared to blue autofluorescence (f) (blue arrows).

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Conflicts of interest

There are no conflicts of interest.

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