

Retinal neovascularization and its regression on doxycycline in epidemic retinitis

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A 22-year-old male presented with sudden diminution of vision in his right eye. He was treated systemically with oral antibiotics for typhoid fever 2 weeks ago. Patient was afebrile and on systemic examination there were no evidence of rash or tick bite or any other systemic symptoms. His previous

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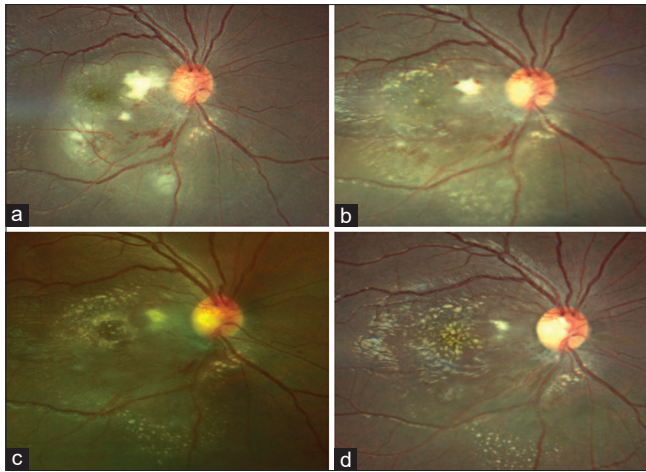


Figure 1: Serial fundus photographs taken at day 0 (a), 1 week (b), 1 month (c), and at last follow-up 6 weeks showing (d) resolving retinitis, retinal neovascularization, and gradual clumping of hard exudates at fovea and others gravitating inferiorly

Widal test at the time of diagnosis of typhoid fever showed high titers for O and H antigen (>160:1). The best corrected visual acuity (BCVA) was 20/250 in right and 20/20 in left eye. Fundus examination of the right eye showed optic disc hyperemia, multifocal retinitis patches, and flame-shaped hemorrhages with adjacent retinal neovascularization (rNV) with macular edema [Fig. 1]. The left eye was normal. Optical coherence tomography angiography (OCTA) showed a fan-shaped vascular net in superficial capillary plexus slab [Fig. 2a].

The patient was started on oral doxycycline 100mg BD alone without any oral steroids for 3 weeks. At 1 week, retinitis and rNV started regressing [Fig. 2b]. At 2 weeks follow up, further regression of rNV was noted on OCTA [Fig. 2c]. At 6 weeks, the rNV had completely regressed and retinitis patches have resolved [Fig. 2d]. Flow void areas in the superficial plexus was also reduced at the last follow up and BCVA had improved to 20/100.

Discussion

Retinal neovascularization in epidemic retinitis is rare. Kawali *et al.* in their largest case series of epidemic retinitis described only 3 cases developing rNV.^[1] Inflammation is a key factor in the development of rNV in uveitis^[2,3] and multiple reports have stated the regression of rNV by corticosteroids.^[3] The resolution of retinal neovascularization with doxycycline in our case might be due to its antiinflammatory property^[4] or the suppression of antivascular endothelial growth factor.^[5,6] It is also interesting to note the “centripetal regression” of rNV that is regression of the fronds leaving behind the main stem.

Retinal neovascularization is a potentially vision-threatening complication of retinitis. Retinitis patches can mask active rNV and OCTA is helpful in detection. Timely treatment with

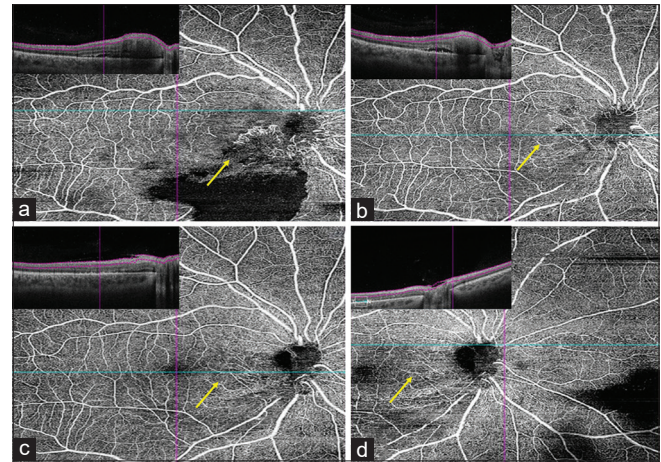


Figure 2: Serial OCTA taken at day 0 (a), 1 week (b), 1 month (c), and at last follow-up 6 weeks showing (d) showing the centripetal pattern of resolution of retinal neovascularization

anti-inflammatory drugs leads to complete regression. The pattern of regression rNV can have long-standing implications and need to be studied in larger series.

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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Nil.

Conflicts of interest

There are no conflicts of interest.

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