

High altitude retinopathy

Muna P Bhende, Aashraya P Karpe, Bikramjit P Pal

High altitude retinopathy is a condition often seen among mountain climbers or among persons who reach high altitudes rapidly. In this report, we describe a case of a 57 year old healthy gentleman who presented with diminution of vision in both the eyes associated with retinal hemorrhages and the spontaneous resolution of the same.

Key words: Retinal hemorrhages, altitude retinopathy

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High Altitude Retinopathy is a well described clinical entity characterized by vascular dilatation and scattered superficial hemorrhages. Although a benign condition, its accurate diagnosis may alert the attending physician in preventing the other more fatal conditions of the spectrum of Altitude Illness namely pulmonary and cerebral edema. Also, the diagnosis of high altitude retinopathy does not immediately come to mind when one sees a patient at sea level and the patient may be investigated for myriad other etiologies. We are also emphasizing the benign course of the condition associated with spontaneous recovery.

Presentation

A 57-year healthy avid mountain climber came with 20 days history of sudden onset painless diminution of vision in the left eye. Patient was on his first Everest expedition when he noticed a central field defect. His medical history was unremarkable.

Best corrected visual acuity (BCVA) was 20/20 in the right eye and 20/50 in the left eye.

Anterior segment examination of both eyes was unremarkable. Fundus examination of both eyes [Figs. 1 and 2] revealed multiple flame shaped superficial hemorrhages located in all the four quadrants up to the mid periphery. In addition, the left eye also had a dark blotchy intra retinal hemorrhage at the fovea measuring approximately 0.5 DD.

The patient underwent a complete hemogram, basic coagulation profile and peripheral blood smear, which revealed no abnormality. He underwent a general physical check up

Sri Bhagwan Mahavir Vitreoretinal Services, Vision Research Foundation, Sankara Nethralaya, Chennai, India

Correspondence to: Dr. Muna P Bhende, No 18, College Road, Medical Research Foundation, Chennai 600 006, India. E-mail: drmuna@snmail.org

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Figure 1: OD color fundus montage at presentation showing multiple superficial hemorrhages

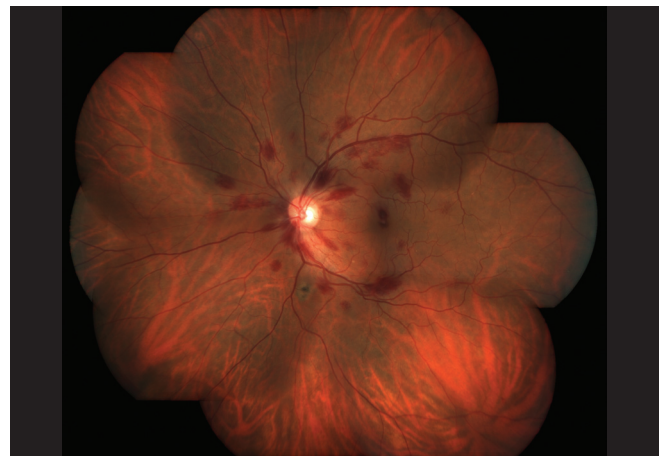


Figure 2: OS colour fundus montage at presentation showing multiple scattered superficial hemorrhages and a blotchy hemorrhage at fovea

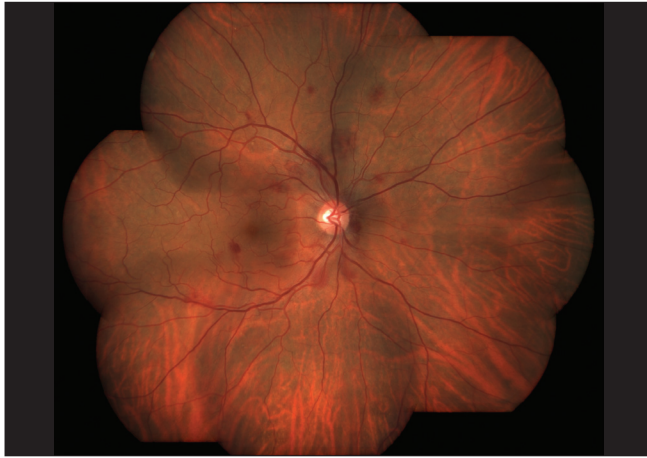


Figure 3: OD colour fundus montage at two weeks follow up showing relative reduction in the hemorrhages

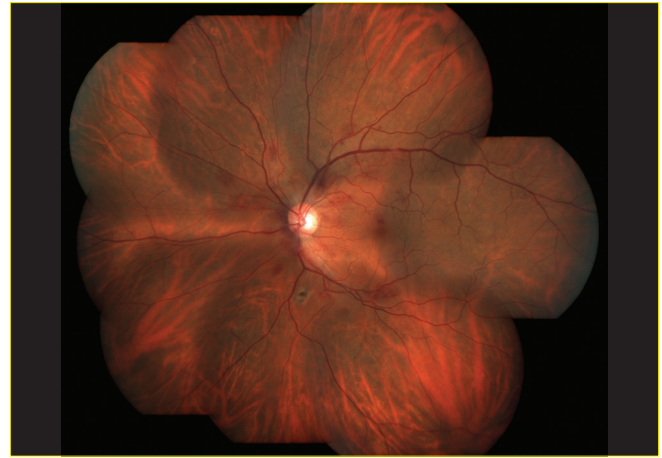


Figure 4: OS color fundus montage at two weeks follow up showing relative reduction in the hemorrhages

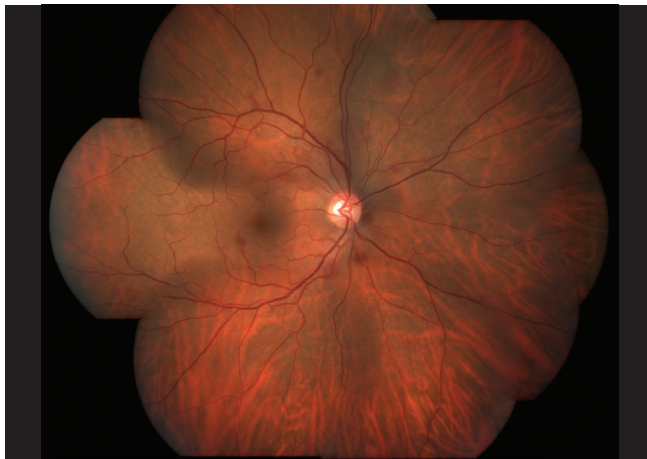


Figure 5: OD color fundus montage at one month follow up showing near total resolution of hemorrhages

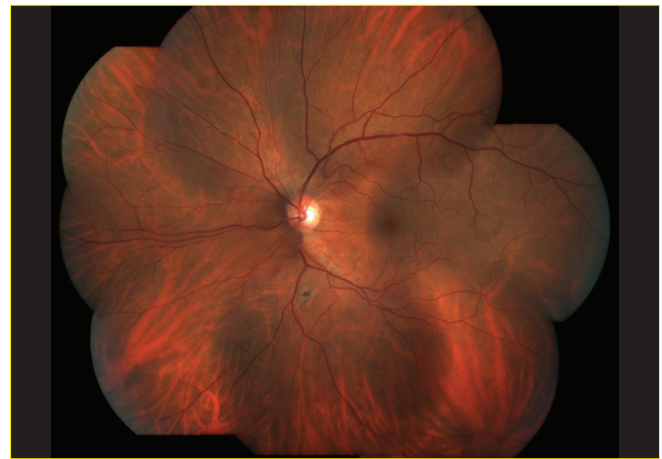


Figure 6: OS color fundus montage at one month follow up with near total resolution of hemorrhages and a dilated STQ vein

and imaging to rule out cardiac or neurological abnormalities, which turned out to be normal.

A diagnosis of High Altitude Retinopathy was made. At four weeks follow up, a near total resolution of hemorrhages with BCVA 20/20, N6 in both eyes was noted, which confirmed our diagnosis. Figs. 3 and 4 shows reduction in hemorrhages at 2 weeks and Figs. 5 and 6 show almost total resolution at 4 weeks.

Discussion

High-altitude retinal hemorrhages (HARH) were first described more than four decades ago by Singh, *et al.*^[1]

High altitude retinopathy was classified by Weidman.^[2] He graded it according to the number and area of distribution of hemorrhages. Various theories,^[2,3] have been described in the pathogenesis of HAR. Autoregulation in response to hypoxia, increase in venous pressure secondary to raised intra cranial pressure and variations in hematocrit levels have been described. However, the autoregulation theory is most widely accepted.

Hypoxia, due to deficient oxygen at a high altitude, induces various compensatory mechanism in the retinal vasculature,^[4]

which leads to retinal hemorrhages. Choroidal circulation does not exhibit autoregulation; hence, the occurrence of hemorrhages is more in the superficial retina than at a deeper level.

This is a usually a self-limiting condition which does not require any active intervention.

References

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