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Case Report

Bilateral cystoid macular oedema due to high altitude exposure: An unusual clinical presentation

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very rare and to the best of our knowledge has been reported only once earlier in literature.³

Case report

A 31-year-old male patient reported to this centre with complains of blurring of vision for the past 1 year. His unit had recently returned after high altitude tenure. The patient gave history of being asymptomatic until he reached a height of around 14,000 feet as part of his acclimatization. Within 2 days, he suddenly noticed blurring of vision in both his eyes without any associated pain or redness. He reported to the nearest eye centre, which was located at a height of 11,000 and was prescribed corrective glasses with which he claimed only a mild improvement. However once he reached his post on the glacier, located at a height of over 18,000 feet, he once again started having severe blurring. He somehow finished his 3 months tenure and once again reported to the eye centre in the base. There he was prescribed a fresh pair of glasses and his vision was recorded as right eye 6/12 (partial) and left eye 6/12 with best possible correction. Fundoscopy done at this stage was recorded as bilateral macular scar as the cause of his vision loss.

On returning back to peace the patient noticed no improvement in his vision and reported to this centre. Ocular examination on presentation revealed the vision to be reduced to 6/36 (right eye) and 6/24 (partial left eye), improving maximum to 6/18 (partial) with glasses. Anterior segment was

Introduction

High altitude pulmonary oedema (HAPO) and High altitude cerebral oedema (HACO) are two of the most commonly described life threatening illness described in patients exposed to high altitude.¹ Ocular pathologies at high altitude mainly manifest as retinal hemorrhages. Occasionally there might be papilloedema, vitreous haemorrhage, soft exudates (cotton wool spots) and rarely even retinal vein occlusion, all occurring as a component of high altitude retinopathy (HAR).² Macular oedema occurring due to exposure to high altitude is

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Discussion

papilloedema and vitreous haemorrhage.⁵ Recent studies on relatively large groups of subjects in Nepal, Bolivia and Tibet have confirmed that the retinal vasculature becomes engorged and tortuous in all lowlanders ascending above 2500 m. This sometimes leads to hemorrhages, cotton wool spots and papilloedema, a pathological state known as HAR⁶ occurring most probably due to the result of systemic hypoxic effects on the eye.⁷ It is assumed that the hypoxia at high altitude causes increased retinal blood flow and blood volume possibly via autoregulatory mechanisms. Furthermore, retinal venous pressure can be increased by extreme physical exertion and valsalva manoeuvres during mountain climbing. A hypoxic retinal capillary bed exposed to increased retinal venous pressure predisposes to intra-retinal haemorrhage.⁸

Macular oedema as a component of HAR is extremely rare, so much so that to the best of our knowledge, it has been reported only once earlier.³ We feel that our patient, who was totally asymptomatic before reaching the high altitude area, suddenly started having blurring of vision due to development of bilateral macular oedema. On being prescribed corrective glasses the patient did not show any significant improvement and the decrease in vision was attributed to bilateral macular scar. This loss of vision persisted even after

Fig. 2 – Bilateral cystoid macular oedema on presentation (FFA).

Fig. 3 – Resolved cystoid macular oedema (OCT) (12 weeks later).

Fig. 4 – Resolved cystoid macular oedema (FFA) (12 weeks later).

the patient descended down to his present unit location in peace. Literature too mentions that HAR can persist or can develop even after descend to lower altitudes.⁷ When he reported to this centre after suffering for over 6 months, his macular oedema was persisting, which resolved completely after 12 weeks course of topical steroids and NSAIDs in tapering doses.⁹

Conclusion

Prevention of high altitude retinopathy involves a careful history and physical examination prior to the ascent. The most effective prophylaxis of acute mountain sickness is slow ascent, which is arbitrarily defined as an increase in sleeping altitude of 300–400 m per 24 h. Macular oedema, though a rare manifestation of HAR should be definitely kept in mind when a patient who is exposed to high altitude reports with complaints of blurring of vision.

Conflicts of interest

All authors have none to declare.

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