High-altitude ophthalmic changes: an often overlooked entity

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TO THE EDITOR: I read with great interest the recent article by Martinot et al. (4). One aspect of high-altitude exposure that is often overlooked is high-altitude-related ophthalmic changes. For instance, high-altitude exposure may result in “central retinal vein occlusion.” Symptoms consistent with occlusion may appear as early as 2 days after entering higher altitudes (2). On the other hand, retinal vein occlusion has been reported as much as a year after entering higher altitudes (5). Descent to lower altitudes is accompanied by complete resolution of the symptoms in most patients. Retinal hemorrhages may also develop (1). Similarly, vitreous hemorrhages may develop. Chronic exposure to high-altitude hypoxia may result in marked intraretinal angiogenesis. Sudden ascent to higher altitudes may also result in severe hypoxia that may significantly decrease “visual sensitivity,” particularly peripheral sensitivity. For instance, Horng et al. (3) in a recent study reported a significant decline in the “mean visual sensitivity” by 7.2 dB. A slightly decreased negative impact is also seen on central visual sensitivity.

Ascent into higher altitudes may also result in the development of glaucoma secondary to altitude-associated accentuation of intraocular pressure. Ascent into higher altitudes is also associated with a resulting increase in the incidence of dry eyes. Incidence rates as high as 50% have been reported (1). A significant association is seen between a Schirmer test score of <5 mm and dry eye symptoms (3). Ascent into higher altitudes also results in accentuation of central corneal thickness. This is secondary to swelling of the corneal stroma secondary to hypoxia-induced endothelial changes (5). This results in a higher incidence of refractive errors in those exposed to high altitudes.

It is obvious from the above examples that ascent into high altitude may cause acute as well as chronic ophthalmic changes. Physicians should be aware of these changes, especially in those who regularly have to ascend to high altitudes.

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