Photo Essay

Inflammatory Precipitates in an Air Bubble in the Aqueous Humor

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PRESENTATION

The patient was a 65-year-old man who had undergone cataract surgery. Owing to a minor Descemet's membrane detachment in the frontal part of the main wound, an air bubble was injected into the anterior chamber (AC) of the eye. On postoperative day (POD) 1, approximately 50% of the AC consisted of air, and the AC cells were reported to be 2 plus.

On POD 2, the patient was referred to the clinic for red eye. In slit lamp examination, there were 4+ AC cells without vitreous involvement. Also a 20% air bubble was noted in the AC [Figures 1a and 1b], and extensive inflammatory precipitates were detected over the air bubble, resembling in shape the keratic precipitates (KPs) on the corneal endothelium.[1] However, there were actually no KPs in this case. An hourly dose of betamethasone eye drop was prescribed. The patient's symptoms of red eye, air bubble, and the inflammatory precipitates were completely resolved by POD 5. The gonioscopy results were normal.

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DISCUSSION

In the industrial sector, floatation techniques are used to purify water, a process during which air bubbles are passed through water, and the organic and inorganic ingredients, which are in suspension, attach to the bubbles and float on the surface of the water. They are then removed from the water using skimming devices.[2,3]

Similarly, in the case of this patient, inflammatory cells accumulated after attaching to air bubbles in the aqueous humor, creating a similar pattern to that of KPs on the corneal endothelium;[1] the term air bubble precipitate (ABP) is used to describe this phenomenon.

The authors believe that this specific property of air bubbles is one of many causes of intraocular lens (IOL) opacification,[4] when inflammatory cells and pigments come into contact with IOLs and air bubbles. Further studies are required to confirm this hypothesis.

ABP might have capabilities in the diagnosis of uveitis and endophthalmitis. With regard to the small aqueous

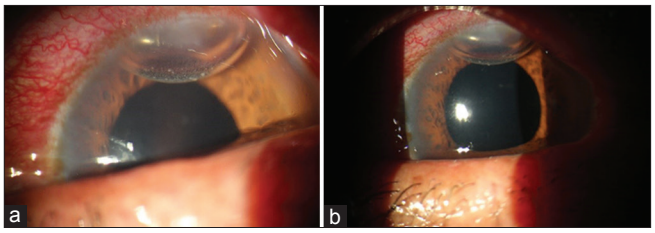

Figure 1 (a,b). Inflammatory precipitates in an air bubble in the aqueous humor.

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