Short communication

Uveitis-glaucoma-hyphema syndrome associated with recurrent vitreous hemorrhage

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ABSTRACT

Case report: A 61-year-old pseudophakic male with recurrent blurred vision episodes associated with uveitis, hyphema, glaucoma and vitreous hemorrhage. Iris transillumination defects and apposition of the optic and iris were found. The patient was diagnosed with uveitis-glaucoma-hyphema (UGH) syndrome.

Discussion: Mechanical irritation of the iris is a consequence of intraocular lens malposition and causes UGH syndrome. Occasionally it is associated with vitreous hemorrhage. Lens malposition is detected by optical coherence tomography and/or ultrasound biomicroscopy.

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Síndrome uveítis-glaucoma-hipema asociado a hemorragia vítrea de repetición

RESUMEN

Caso clínico: Varón de 61 años seudofaco, con episodios recurrentes de visión borrosa asociados a uveitis, hipérmia, glaucoma y hemorragia vitrea. Se objetivaron defectos de transiluminación del iris y contacto entre la óptica de la lente y el iris siendo diagnosticado de síndrome de uveitis-glaucoma-hipema (UGH).

Discusión: La irritación mecánica del iris consecuencia del mal posicionamiento de la lente intraocular origina el síndrome de UGH. Ocasionalmente se asocia a hemorragia vitrea. La malposición de la lente se confirma mediante tomografía de coherencia óptica y/o biomicroscopía ultrasónica.

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**Introduction**

The uveitis-glaucoma-hyphema syndrome (UGH) is caused by the mechanical irritation of an intraocular lens (IOL) malpositioned over adjacent structures such as the iris, the ciliary body and the iridocorneal angle, producing sector atrophy defects in the iris and pigment dispersion, micro-hyphemas and hyphemas with associated ocular hypertension.  

UGH occurs more frequently with anterior chamber lenses with iris support, and it is also described with posterior chamber lenses positioned in the sulcus or in the capsular bag.

The loss of anterior hyaloids integrity (spontaneous, degenerative or after surgery) enables communication between the aqueous humor and the vitreous, facilitating the transfer of blood and giving rise to the possibility of simultaneous bleeding in both chambers. In addition, IOL malposition can impinge on the ciliary body producing bleeding in the vitreous chamber.

**Case report**

Male, 61, who visited the emergency service with acute blurred vision and pain episode in the right eye (RE). Personal history included 14 dpt myopia, transparent lens surgery and IOL implant 12 years earlier, vitreous hemorrhage (VH) in RE 4 years earlier with 4 relapses attributed to retinal tears despite coexisting with hyphema and ocular hypertension. Upon the second relapse, posterior pars plana vitrectomy was performed.

Upon exploration, visual acuity (VA) was hand movements, intraocular pressure (IOP) above 50 mmHg and hematic Tyndall with active retro-iridial bleeding in a contact area between IOL and iris. The latter appeared atrophic with large transillumination areas. The IOL, made up of 3 pieces and square edges, was located in the sulcus and slightly displaced forward (Figs. 1 and 2).

Ocular fundus (OF) exhibited grade IV VH which prevented the examiner from seeing the ocular fundus.

Spectral domain optic coherence tomography (OCT-SD Topcon 3D OCT-1000, Tokyo, Japan) of anterior segment, as well as ultrasound biomicroscopy (BMC-US, Quantel Medical Aviso Ultrasound Platform Cedex, France) demonstrated IOL-iris contact (Fig. 3).

**Discussion**

To revert the active bleeding and prevent IOL-iris friction, cycloplegic and topical dexamethasone were applied up to the resolution of blood remains in the anterior chamber. IOP remained high up to said point, requiring the use of 4 topical hypotensors. Vitreous bleeding disappeared one week later without observing OF lesions that could explain it. One year later, the patient VA was of 0.1 and IOP controlled with 3 topical hypotensors. No additional bleeding episodes occurred.

UGH syndrome must be suspected with pseudophakic patients having blurred vision episodes during weeks or months after cataract surgery with signs of iridocyclitis or spontaneous microhipema, transillumination defects in the iris and intraocular pressure increases. In the present case, active retro-iridial bleeding in the IOL friction area facilitated the diagnostic.

Malpositioning of haptics or optics in posterior chamber lenses accounts for friction with, most commonly, a posterior chamber IOL placed in the sulcus instead of in the bag, particularly with square edges IOL, including single block IOLs which are recommended to avoid placing in the sulcus.
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Preventively, it is recommended to implant the IOL in the bag with adequate capsulorhexis size to avoid the displacement of IOL haptics and edges. Even with adequate positioning in the bag, UGH syndrome was described with single block IOL with square edged haptics in specific situations: zonular laxitude and plateau iris. This should be taken into account for early detection.

OCT-SD and/or BMC-US assists diagnostic as it shows the IOL position in the surrounding anatomic structures. Even though VHL is rarely associated, the literature describes cases in which, similarly to the present case, the presumable mechanism is the lack of integrity of the anterior hyaloids which allows the passage of blood between the anterior chamber and the vitreous, without evidence of contact between the IOL and the ciliary body. The coexistence of VHL should not delay diagnostic.

Treatment consists in controlling inflammation and IOP with corticoids and topical hypotensors. To prevent recurrence, friction between the iris and IOL should be avoided by means of topical treatments with midritics or miotics, or surgical treatments such as IOL explant.

By way of conclusion, in-depth examination together with imaging tests such as anterior chamber OCT and/or BMC-US is highly important. Possible coexistence with VHL should not delay diagnostic. It is also important to control IOP, inflammation and hemorrhages as well as to avoid recurrences with individualized conservative treatment. Finally, prevention is very important, including implanting IOL in the sac with an appropriate capsulorhexis size, considering in zonular laxitude or plateau iris cases the use of IOL with round edges.

**Conflict of interests**

No conflict of interests has been declared by the authors.

**References**