Longterm Subluxation of an Artisan Phakic Intraocular Lens

Arturo E. Grau, MD, Juan A. Durán, MD

ABSTRACT: A 34 year-old patient presented at our clinic with impaired vision in his right eye after an ocular trauma, one year after bilateral myopia surgery involving implantation of an Artisan® phakic intraocular lens in both eyes. Ocular trauma was due to an aggressive punch in the face. The patient was diagnosed with IOL subluxation, but he rejected surgery for lens repositioning. He returned to the clinic 30 days later and was now willing to undergo the proposed surgery, which was performed without complications. During subsequent follow-up, the patient exhibited normal endothelial cell density and no ocular alterations were observed. Visual acuity was recovered to previous levels. The patient reported no subjective signs of visual discomfort.

KEYWORDS: Phakic IOL; lens subluxation; endothelial cell count.

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INTRODUCTION

Phakic intraocular lenses are becoming more frequent refractive procedure, since they represent a surgical alternative to LASIK for patients with severe ametropia. In recent years, novel designs of these lenses have been reported to lead to endothelial alterations when displaced. Here, we report the case of a patient with Artisan® IOLs in both eyes, who presented with traumatic lens subluxation in his right eye. What is noteworthy about this case is that the interval between diagnosis and surgical resolution was 30 days.

CLINICAL CASE

A 34 year-old patient was operated on over a year ago for bilateral myopia with Artisan ® phakic intraocular lenses. He attended our clinic because of ocular trauma due to a fist punch in his right eye. Patient antecedents included: best corrected visual acuity before operation: 20/40 in both eyes [refraction: right eye: –10.50 sph. –1.75 cyl. (5°), left eye: –10.00 sph. –2.75 cyl. (160°)]. Artisan® phakic IOLs was implanted without complications. Post-operative uncorrected visual acuity was 20/50 –2 for both eyes.

Under biomicroscopic examination, we observed subluxation of the temporal claw of the Artisan® IOL in the right eye (Figure. 1). Visual acuity was 20/100 and endothelial cell density was 2811 cells/mm^2.

The patient refused surgery for lens reposition. He returned for surgery 30 days later. The lens claw was placed in position, in the absence of any complications. During subsequent follow-up, the patient exhibited spontaneous visual acuity of 20/50 and there was no significant change in the endothelial cell count at the 1, 3 and 6 months post-operative periods.

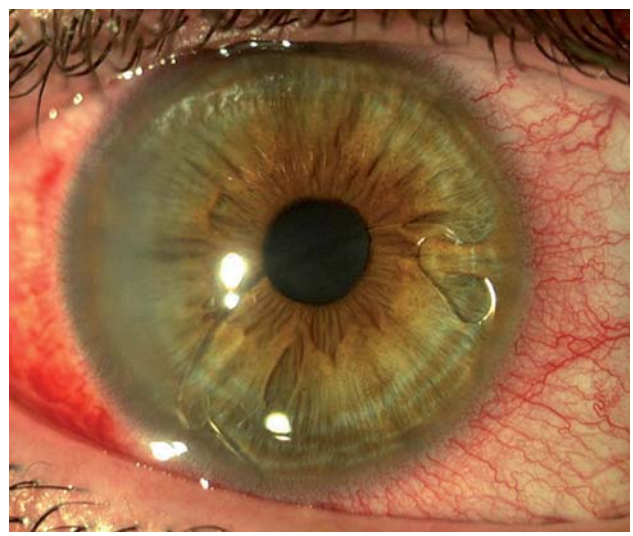

Figure 1. Subluxated Artisan® phakic IOL.

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Address: Arturo E. Grau, MD. Instituto Clínico Quirúrgico de Oftalmología. Virgen de Begoña, 34, 48006 Bilbao (Vizcaya), Spain. E-mail: artgra@hotmail.com

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DISCUSSION

The present case confirms the safety of the Artisan® lens; even when only one of the iris claws is in position, the lens remained stably in place, possibly due to its resting in the inferior iridocorneal angle. Thus it didn't cause any endothelial damage during the month until the lens was relocated. It is likely that the resting of the lens in the iridocorneal angle offered it sufficient stability to avoid contact with the endothelium[1].

Several studies have reported that the Artisan® lens is safe and that the associated reduction in the density of endothelial cells is not significantly higher than that which occurs physiologically[2-5]. Nevertheless, some case studies have reported a significant loss in endothelial cells. However, in these cases it was shown that despite the presence of a wide anterior chamber angle, the lens had moved towards the corneal endothelium. Pupillary changes and saccadic movements were likely due to poor lens anchoring to the iris[6]. A direct correlation between the loss of endothelial cells and lens-endothelial distance, i.e. anterior chamber depth (ACD) has been reported; distances around 3 mm are considered to be safe for avoiding loss of endothelial cells. It is recommended that in the case of young patients, ACD reduction should be considered to be around 0.12 mm/decade. Changes in the anatomy of the iridocorneal angle have also been reported, but in the absence of glaucoma. These data corroborate the safety of the lens, but make it clear that safety depends directly on the following: appropriate surgical indication; a precise and thorough clinical evaluation; respecting minimal parameters regarding lens-endothelial distance (ACD); presence of a clear lens; an adequate number of endothelial cells and finally the absence of iris pathology[7,8].

After an experience of more than 150 cases, we have not seen any luxation with the current generation of the Artiflex® phakic lens, indicating a minimal risk of traumatic luxation. This can be explained by the flexibility of the lens, which may bend together with the globe deformation. In cases in which it is necessary, as in the present case, to re-operate, the following parameters should be evaluated: signs of intraocular inflammation, anatomical status of the iris, intraocular pressure, status of the lens and corneal endothelial cell count.

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First author:
Arturo E. Grau

Instituto Clínico Quirúrgico de Oftalmología
Bilbao (Vizcaya)