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YAG Laser Capsulotomy Complication

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A 41-year-old presented with unilateral painful eye, with reduced vision since a YAG laser procedure. This was carried out by a local ophthalmologist when she presented with hazy vision in the right eye and gave a previous history of lens implantation.

Her original ophthalmology surgeon found that her visual acuity in this eye had dropped from 6/12 to HM. Her eye was slightly inflamed with raised intraocular pressure and a white cataract, seen underneath a -12-Implantable collamer lens (ICL). It appeared that her crystalline lens was breached by the YAG laser, causing an acute inflammatory response. The decision was made to remove the ICL and cataract immediately. During the operation, it was noticed that the posterior capsule was breached and a pars plana vitrectomy had to be performed to remove the dropped lens fragments. The patient's corrected VA reached 6/12 one-month post-operatively and IOP was controlled with topical anti-glaucoma drops.

The main indication of phakic IOLs (pIOLs) is correction of refractive errors beyond the range of **laser vision correction (LVC)** or contraindications to LVC in general.[1] Based on the location and technique, pIOLs can be anterior or posterior chamber. A considerable number of anterior chamber pIOLs have appeared in recent decades but these were progressively withdrawn from the market due to endothelial cell loss leading to corneal decompensation.[1] Therefore posterior chamber pIOLs have taken predominance[1]. The main type is the Visian ICL, STAAR surgical® made with collagen copolymer and hydrophilic *collamer*.

One of the drawbacks associated with posterior chamber pIOLs is the risk of pupil blockage and therefore US FDA-approved ICL requires the surgeon to perform preoperative laser iridotomies.[2] This has led to the development of the new Visian 4C and 5 (CE-marked) which includes a central micro-port [1].

The ICL vaulting needs to be observed closely for migration as changes can lead to cataract or glaucoma depending on the direction. Young patients are also at risk of developing corneal decompensation, loss of accommodation. Inevitably ICLs will require undergoing a bilensectomy when the eye develops a "natural" cataract or sooner, if the eye develops any of the afore-mentioned complications.[4]

We present a novel case of a complication following YAG laser capsulotomy related to refractive pIOL. Even though yag laser is usually a generally a safe procedure to undergo, this case illustrates the importance of an optimal ocular history and thorough examination with dilated pupils, in order to identify anything unusual for example an ICL. Ideally more complex cases should be referred to their original clinician for better record keeping and to maintain consistency of care.

Managing the complication itself requires planning similar to that of a traumatic cataract. We postulate that breaching the anterior or posterior capsule may cause the patient's lens to swell up resulting in an intumescent cataract or release of lens proteins, inducing an acute inflammatory response with or without IOP rise. This iatrogenic phacolytic reaction usually responds poorly to medical treatment and requires bilensectomy to avoid persistent uveitis and glaucoma.[5] For ease, ICL can be removed through a regular main incision used with routine phacoemulsification and IOL insertion. Where there is a breach of the posterior capsule, one must be prepared for pars plana vitrectomy.

Refractive surgery in general and ICL specifically have recently gained popularity due to the remarkable effect on unaided vision and substantial improvement in quality of life. Hence, raising awareness of such complications is vital. The eye does not see what the mind does not know, so, as there is a growing trend to transfer the YAG laser burden onto the community opticians, introducing a standardised training program is of paramount importance.

REFERENCES

I. Martínez-Plaza E, López-Miguel A, Holgueras A, Barraquer RI, Alió JL, Maldonado MJ. Phakic intraocular lenses: recent advances and innovations. Archivos de la Sociedad Española de Oftalmología (English Edition). 2020 Apr 1;95(4):178-87.

II. Gonvers M, Bornet C, Othenin-Girard P. Implantable contact lens for moderate to high myopia: relationship of vaulting to cataract formation. *J Cataract Refract Surg*. 2003;29(5):918–924.

III. Schmidinger G, Lackner B, Pieh S, Skorpik C. Long-term changes in posterior chamber phakic intraocular Collamer lens vaulting in myopic patients. *Ophthalmology*. 2010;117(8):1506–1511.

IV. Colin J. Bilensectomy: the implications of removing phakic intraocular lenses at the time of cataract extraction. Journal of Cataract & Refractive Surgery. 2000 Jan 1;26(1):2-3

V. Epstein DL. Diagnosis and management of lens-induced glaucoma. Ophthalmology. 1982 Mar;89(3):227-30.

VI. Packer M. Meta-analysis and review: effectiveness, safety, and central port design of the intraocular collamer lens. Clinical Ophthalmology (Auckland, NZ). 2016;10:1059.