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Case Report

Suture of a Plate-type Intraocular Lens in the Absence of a Capsular Bag. A Case Report

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Abstract

The management of lens subluxation has changed over time. We present a novel technique for plate-type folding intraocular lens suture such as the CT Spheris 204 (Carl Zeiss, Germany) for patients where there is no capsular bag.

Keywords: Marfan Syndrome; Subluxation Lens; IOL Suture; Intraocular Lens

Abbreviations

IOL: Intraocular Lens; MS: Marfan Syndrome; BCVA: Best Corrected Visual Acuity; RE: Right Eye; LE: Left Eye; CA: Anterior Chamber; M: Meridians; D: Diopters

Introduction

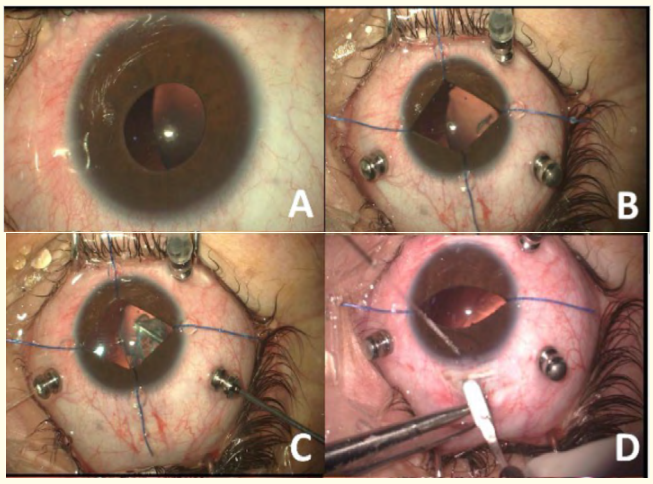
The management of lens subluxation has changed over time, options such as limbus[1,2], transciliary [3], and pars plana [4-8] lensectomy have been explored. In addition, contact lenses [9], open loop anterior chamber lens [5,7], retro pupillary fixation lens [10], pre-pupillary fixation lens "Artisan" [11,12], and also have been used in optical correction non-folding [6] and silicone [9] type scleral sutured lenses. We present a novel technique for plate-type folding intraocular lens (IOL) suture such as the CT Spheris 204 (Carl Zeiss, Germany) for patients where there is no capsular bag.

Presentation of the case

23-year-old female patient, reason for consultation under visual right eye of 13 years of evolution, without significant inherited-family history, diagnosis of Marfan syndrome (MS) 15 years ago. Best Corrected Visual Acuity (BCVA): Right Eye (RE): 20/800 Left Eye (LE): 20/20.

RE: Transparent cornea without alterations, wide anterior chamber (CA), central round pupil brown iris with non-reactive midrisis, lens subluxed towards M9 temporal region (Figure 1A), funduscopy without alterations.

LE: transparent cornea, formed AC, brown iris with normoreactive central pupil, transparent central lens, fundoscopy: no alterations.



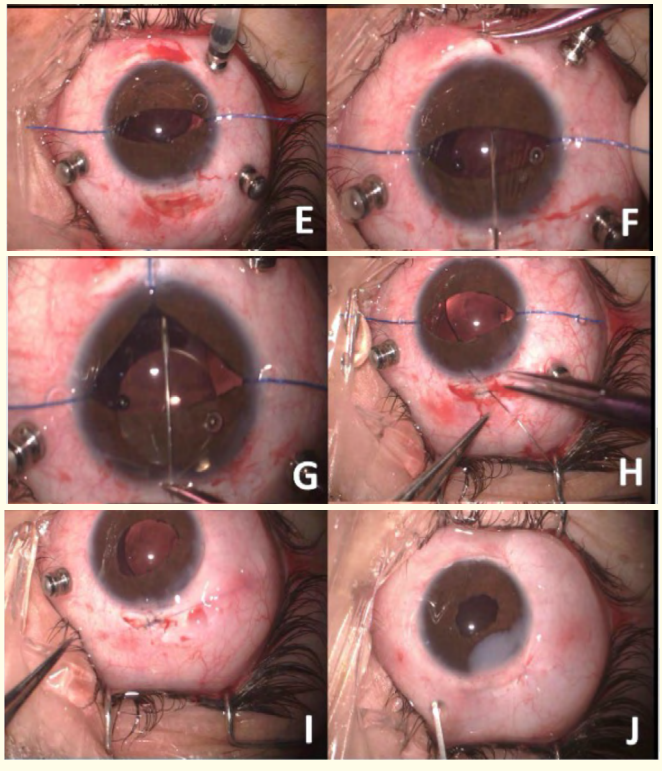


Figure 1: Pre-surgical appearance seen by the surgeon (A), prior to the start of vitrectomy (B), pars plana lensectomy (C), scleral tunnel in meridian 12 (D), implantation of intraocular lens in anterior chamber (E), lens suture initiation, passing M6 needle through lens holes, guided with 30G needle (F), needle return via clear cornea through lens hole to scleral tunnel (G), suture anchored to sclera (H), scleral tunnel suture (I), final aspect (J).

Materials and Methods

Lens suturing technique

Under retro-bulbar block, placement of iris hooks, lensectomy and anterior-posterior vitrectomy via pars plana with 23g caliber was performed, endolaser was applied to the peripheral retina at 360º. Upper and lower conjunctival peritomy is performed, scleral tunnels at 2 mm from the limbus in meridians (M) 12 and 6, with a Crescent type knife, a 2.8 mm corneal port is performed, accessory ports with a 15 knife in M12 and M6, it is filled anterior chamber with viscoelastic, IOL implant type CT Spheris 204 leaving it in CA. A 10-0s prolene-type suture is introduced through the M6 sclerotomy with a straight needle, passing it between the opening of the plate guided by a 30G needle, leaving via the clear cornea and returning through the same corneal orifice towards the initial sclerotomy, anchoring the suture to the sclera and knotting it. He repeated the procedure with the other end of the IOL, suturing it to the sclera at M12. Knots are tightened and the IOL is centered, leaving it in the posterior chamber (Figure 1.B-J).

Results and Discussion

The BCVA in the postoperative period 1 month after surgery was 20/150, with a spherical equivalent of -0.87 Diopters (D), a lens of +12.00 D was placed, corroborating its position and aligned by Optical Coherence Tomography of the anterior segment (Figure 2). The little visual improvement is due to the amblyopia that developed secondary to the years that the eye remained with the lens subluxed.

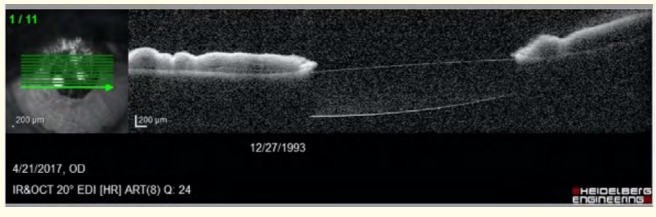


Figure 2: Optical Coherence Tomography of the anterior segment, a lens is observed in a retro-iridinan position.

Conclusion

Intraocular lens suture has been described in patients with MS, in whom there is no capsular bag, but the suture of foldable lenses in a hydrophilic acrylic plate type monoblock is a novel technique and represents a theoretical advantage in a decrease in the endothelial cell loss compared to anterior chamber lenses.

Conflict of Interest

The authors declare that we have no conflict of interest.

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