A case series of intraocular lens (IOL) dislocation in atopic dermatitis patients

Dr. Qi Xun Lim (MBChB)[1]; Dr. Mohammad Mustafa (FRCOphth)[1]; Dr. Ashraf Khan (FRCOphth)[1]; Dr. Harry Bennett (FRCOphth)[1]
[1]Princess Alexandra Eye Pavilion, Edinburgh, UK

Introduction

Cumulative incidence of IOL dislocation in the literature is between 0.1% to 3%[1-6] Late IOL dislocation occurs 3 or more months following cataract surgery and is generally associated with in-the-bag IOL dislocation. This is thought to be due to zonular weakness and dehiscence. To our knowledge, very few cases of IOL dislocation in patients with a history of habitual eye rubbing and severe atopic dermatitis have been reported in the literature.

Methodology

This study was conducted as a retrospective, observational case series in Princess Alexandra Eye Pavilion, Edinburgh. We present a series of seven eyes of six patients with IOL dislocation in patients with severe atopic dermatitis in which three of the patients had extracapsular cataract extraction (ECCE) and the other three had phacoemulsification.

Case 1

32-year-old Caucasian male presented with a history of sudden deterioration of vision in his right eye in October 2001.,

- Ocular history: Right ECCE with plate haptic IOL implant in 1991
- Relevant history: Atopic keratoconjunctivitis, keratoconus and severe atopic eczema . Frequent eye rubbing
- Examination: Best corrected visual acuity (BCVA) was 3/36 with pinhole. There is in-the-bag IOL dislocation into the inferior vitreous
- Management: Rigid gas permeable contact lenses . BCVA 6/10.

Case 2

34-year-old Caucasian male presented with a 3-day history of blurred vision in his right eye in November 2005.

- Ocular history: Right ECCE 1993
- Relevant history: Severe atopic eczema . Frequent eye rubbing and scratching skin. Retinitis pigmentosa
- Examination: BCVA was 6/60. There is inferior displacement of the right IOL and capsular bag which subsequently dislocated into the vitreous in 2006
- Management: Aphakic contact lens. BCVA 6/10.

Case 3

45-year-old Caucasian male presented with acute blurred vision in his right eye in August 2012.

- Ocular history: Right ECCE 1991.
- Relevant history: Severe atopic eczema . Frequent eye rubbing and slapping around periorbital region to relieve itch. Examination: BCVA was 6/12. There is inferior displacement of the right IOL and capsular bag into vitreous
- Management: Glasses. BCVA Counting fingers.

Case 4

62-year-old Caucasian male presented with 5-day history of blurred vision in his left eye in June 2014.

- Ocular history: Left Phacoemulsification and IOL 2007.
- Relevant history: Severe atopic eczema, ashtma. Frequent eye rubbing and occasionally banging his head to relieve itch.
- Examination: BCVA was 1/36. There is subluxation of the left IOL causing pupil block. IOL completely dislocated into vitreous in September 2020.
- Management: Aphakic contact lens. BCVA 6/9

Case 5

47-year-old Caucasian female presented with reduced vision in right eye in Jan 2017.

- Ocular history: Left Phacoemulsification and IOL 2008; Right Phacoemulsification 2011.
- Relevant history: Severe atopic eczema, seasonal allergic conjunctivitis. . Frequent eye rubbing and occasionally banging his head to relieve itch.
- Examination: BCVA Right eye 6/24. There is subluxation of the right IOL. IOL completely dislocated into vitreous in September 2020.
- Management: Right IOL sutured to iris in 2017. BCVA 6/12

Re-presented with monocular diplopia in left eye in 2020.

- Examination: BCVA was 6/18 . Left IOL subluxed
- Management: IOL fixated to sclera using Yamane technique, but subsequently subluxed 2 weeks post-operatively. IOL replaced with anterior chamber IOL. BCVA in left eye 6/6

Case 6

31-year-old Caucasian male presented with 3- day history of blurred vision in his right eye in May 2021.

- Ocular history: Right Phacoemulsification and IOL 2007.
- Relevant history: Severe atopic eczema. Frequent eye rubbing
- Examination: BCVA was 6/60. Right IOL and bag dislocated into vitreous .
- Management: Right vitrectomy and scleral fixated IOL. BCVA 6/6

Discussion

All the patients had facial dermatitis and were either on topical steroids or on low-dose oral steroids. They had a history of eye rubbing or slapping around the periorbital area to relieve itchiness due to the atopic dermatitis. Eye-rubbing is frequently seen in patients with facial or ocular atopic dermatitis and is a significant predictor of keratoconus[(7)]. Late IOL dislocation in patients with atopic dermatitis is uncommon, there are only a few case reports found in the literature . Eye rubbing or repetitive periorbital slapping can create an anterior-posterior mechanical force that can stress the zonules and subsequently cause dehiscence[(8,9)]. Therefore, our proposed mechanism of IOL dislocation in this series of patients is also due to zonular weakness or disruption secondary to eye rubbing.

TABLE 1. Summary of cases with patient details and management of intraocular lens dislocation

Case No.	Laterality	Age/ Sex	Past medical history	Cataract extraction	Eye rubbing	Admission BCVA	Post-management BCVA	Management
1	Right	32/ M	Atopic eczema, atopic keratoconjunctivitis, keratoconus	ECCE	Yes	3/36	6/10	Aphakic contact lens
2	Right	34/ M	Atopic eczema, retinitis pigmentosa	ECCE	Yes	6/60	6/12	Aphakic contact lens
3	Right	45/ M	Asthma, atopic eczema	ECCE	Yes	6/12	CF	Glasses
4	Left	62/ M	Asthma, hay-fever, atopic eczema, ocular hypertension	Phacoemulsification	Yes	1/36	6/9	Aphakic contact lens
5	Right	47/F	Allergic conjunctivitis, eczema	Phacoemulsification	Yes	6/24	6/6	Lens sutured to iris for repositioning
	Left	47/F	Allergic conjunctivitis, eczema	Phacoemulsification	Yes	6/18	6/12	Lens replaced with anterior chamber lens
6	Right	31/ M	Atopic eczema	Phacoemulsification	Yes	6/60	6/6	Vitrectomy + Scleral fixated intraocular lens

Discussion

Zonules arise from surface ectoderm and mesoderm which is similar to the embryological origin of the skin hence there may be an association biologically[(10)].

Conclusion

Our case series shows seven eyes of six patients who all suffered from late IOL dislocation in the context of severe eye rubbing secondary to atopic dermatitis indicating that this may be a significant contributory factor in this group of patients. It is important to recognize this when discussing cataract surgery with these patients. Recognizing this rare association is important to the patient, ophthalmologist, and dermatologist.

Reference

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