

# Posterior Chamber Phakic Intraocular Lens Explantation and Reposition Causes: 13 Years of Follow up

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 **ASCRS**  
ANNUAL MEETING  
23-27 JULY 2021 | LAS VEGAS, NV

# Disclosures

The authors have no financial interest in the subject matter of this presentation



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# Purpose

To describe the causes of repositioning and explantation of different models (V4b, V4c and V5) of Implantable Collamer Lens (ICL) phakic intraocular lenses.



# Methods

Retrospective analysis of medical records.

✓ August 2006 to October 2019

## Inclusion criteria:

✓ Patients over 21 years old, ICL explantation or repositioning, complete clinical records

## Statistical analysis:

✓ STATA 16.0 Software (StataCorp LP, College Station, TX, USA)

## Outcomes:

✓ Causes of repositioning and explantation with different models of ICL (V4b, V4c, V5)



# Results

**Table 1.** Baseline characteristics of repositions and explantations performed (n=25).

Parameter	Value (n=25)
Age, years (mean $\pm$ SD; [range])	30 $\pm$ 5.9 [21 – 45]
Female, no (%)	14 (56)
Preoperative BCDVA, logMAR (mean $\pm$ SD; range)	0.11 $\pm$ 0.72 [0.52 – 0]
Preoperative spherical equivalent, Diopters (mean $\pm$ SD; range)	-10.79 $\pm$ 4.6 [-19.75 – -4.50]
ICL model, no. (%)	
Spherical	3 (12)
Toric	22 (88)
V4b	7 (28)
V4c	16 (64)
V5	2 (8)



# Results

**Table 1.** Baseline characteristics of repositions and explantations performed (n=25).

	ICL model n=25 (no., %)			
	Total	V4b	V4c	V5
<b>Repositionings</b>	12 (48%)	2	8	2
<b>Explantations</b>	13 (52%)	4	9	-
Hyper-vaulting	5 (38%)	-	5 (56%)	
Cataracts	4 (31%)	2 (50%)	2 (22%)	
Hypo-vaulting	1 (8%)	-	1 (11%)	
Retinal detachment	1 (8%)	-	1 (11%)	
Endothelial cell loss	1 (8%)	1 (25%)	-	
Labeling error	1 (8%)	1 (25%)	-	



# Discussion

## What was known?

- ✓ Few studies reporting and analyzing ICL causes of explantation and repositionings<sup>(1),(2),(3),(4)</sup>.
- ✓ Largest case series report (240 eyes)<sup>(5)</sup>, including other phakic IOL models, found cataract and inadequate size or power as the two main causes of explantation in the posterior chamber group.



- (1) Khalifa YM et al. J Refract Surg. 2010;12:991-994.
- (2) Couillet J et al.. J Cataract Refract Surg. 2007;8:1477-1481.
- (3) Al-Swailem SA et al. J Refract Surg. 2006;5:513-515.
- (4) Ruiz-Moreno JM et al. Am J Ophthalmol. 1999;3:270-275

# Discussion

What does our study contribute?

- ✓ In 12 repositionings analyzed, 3 were post traumatic.
- ✓ In 13 explantations analyzed, the main causes were hyper-vaulting and cataract.
  - ✓ None of the studied eyes developed high IOP or glaucoma.
  - ✓ Anterior subcapsular cataract
- ✓ ICL V4c was the most frequently explanted and repositioned model.





# Conclusion

Misalignment of toric ICL is a complication that could require repositioning of the pIOL when visual acuity is affected.

In our study, the main causes of explantation were the hyper-vaulting and cataract, so patients should be advised before surgery about this possibility, and the requirement of a new surgical procedure to solve it.

