



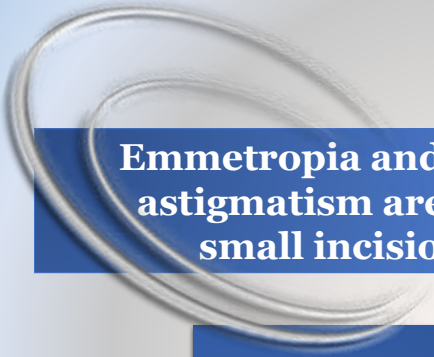
Opposite Clear Corneal Incision

***Nomogram for Correction of Low to Moderate Astigmatism
During Cataract Surgery***

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No Financial interest

Alexandria Ophthalmology Summit 2019



**Emmetropia and No surgically induced
astigmatism are the target of Modern
small incision cataract surgery**

By

**AK
LRI**

**Toric IOL
Excimer laser
& various incision types**

**The astigmatic effect of Clear Corneal Incision (CCI)
is used to
control astigmatism during cataract surgery.**

**The usual technique is to open the wound on the
steepest meridian (**0.5 D**).**

QUESTIONS

- 1. Can you do it in all cases ?**
- 2. How much astigmatism would it correct?**
- 3. What is the distance between the wound and the limbus?**

El-Massry

**The effect of
OCCI (Opposite Clear Corneal Incision)**

Or

Toric IOLs

**In correcting the preexisting astigmatism during
Phacoemulsification**

Bimanual Phacoemulsification through (1.8mm)

or

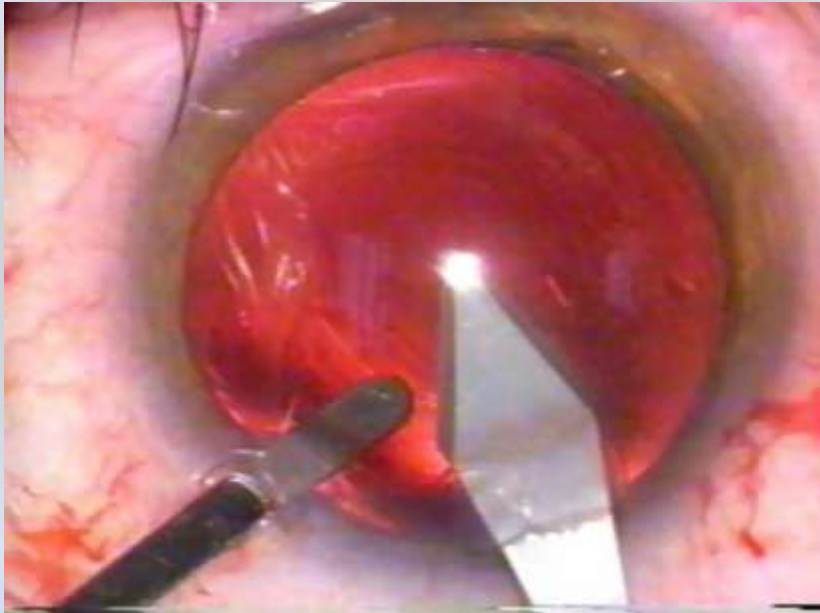
microcoaxial phaco (SIA 0.5 D)

**is done away of the steepest meridian determined
topographically.**

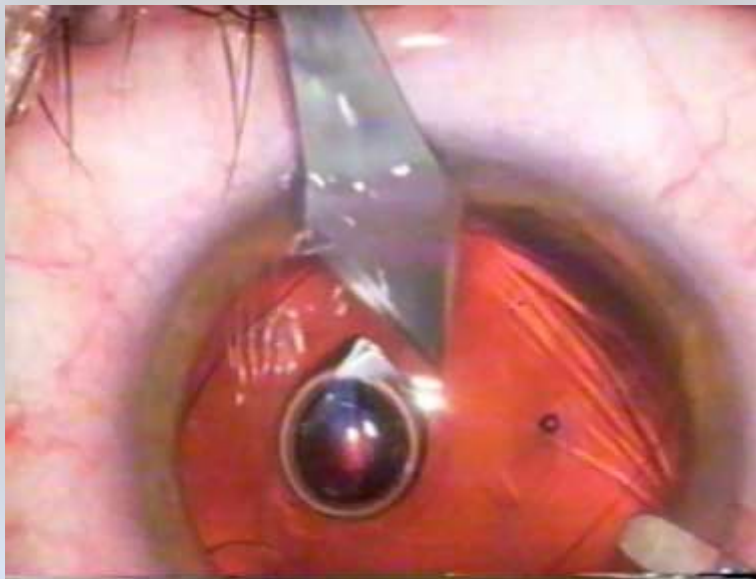
Marking the steep meridian



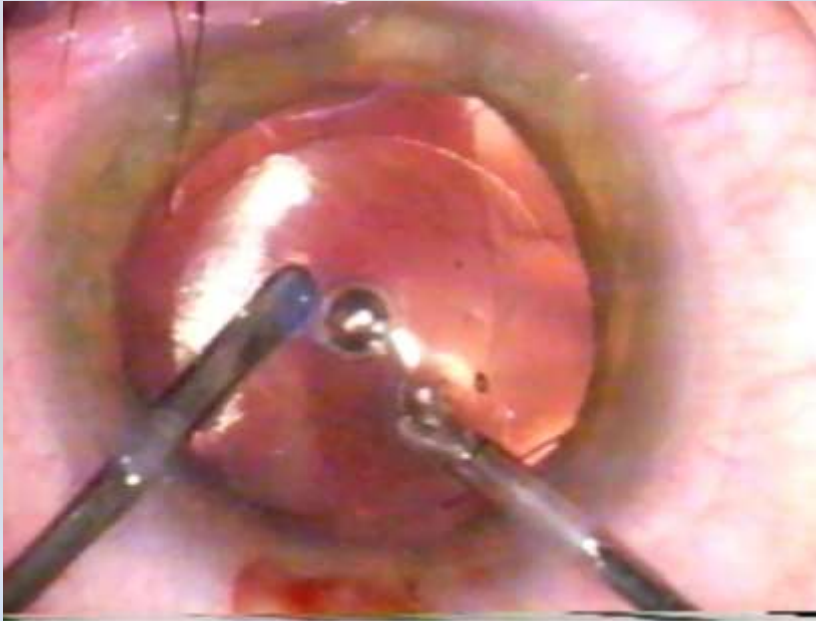
CCI at the steep meridian & IOL insertion



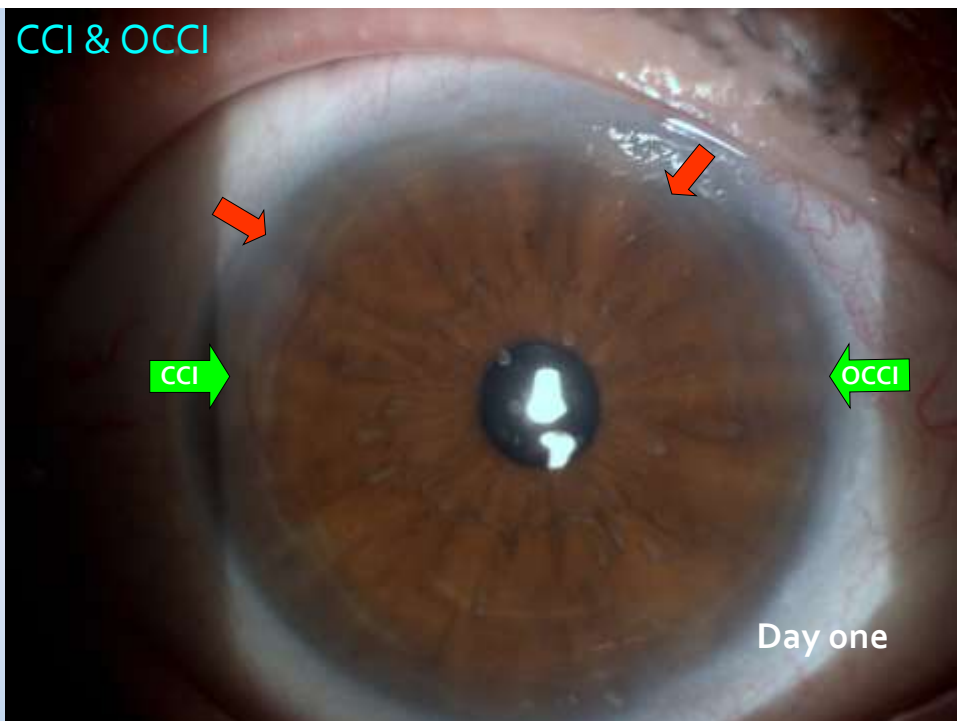
3 mm OCCI 180 degrees opposite the CCI on the steep meridian

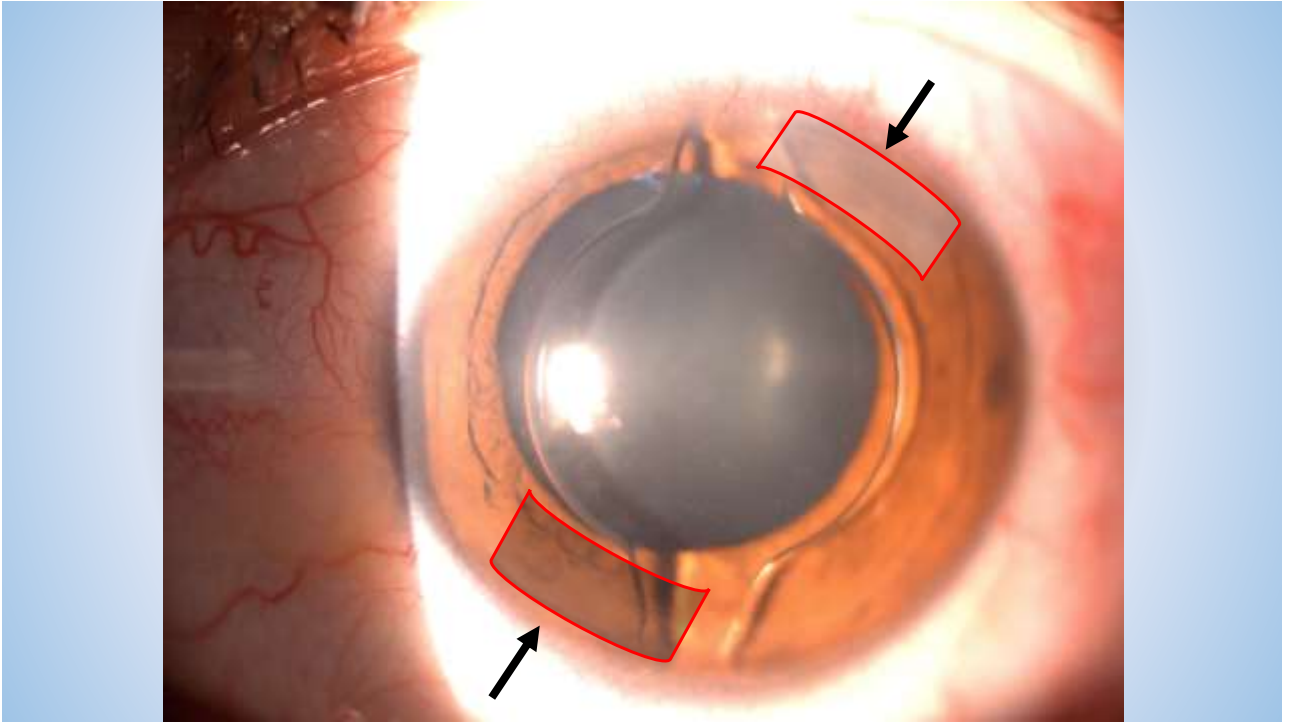


I/A after OCCI



CCI & OCCI

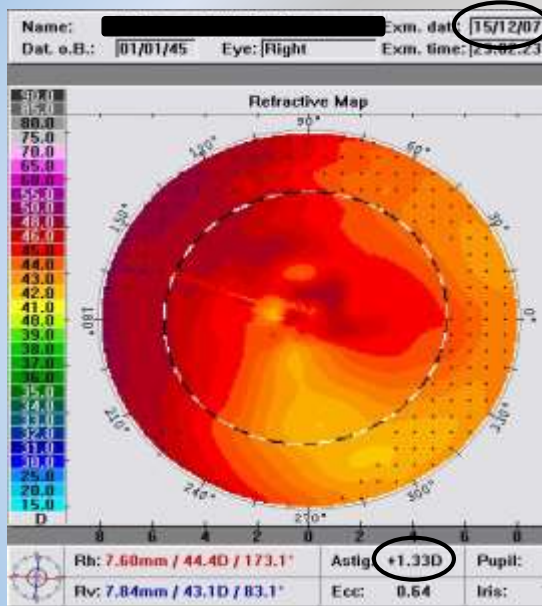




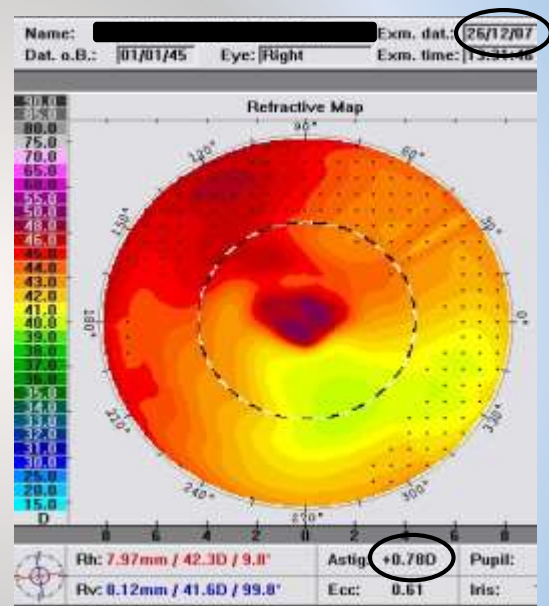
- ❖ **3 mm OCCI** on the steep meridian **1 mm** anterior to the limbus **reduces 1.87 D** of the preoperative astigmatism.
- ❖ **3 mm OCCI** on the steep meridian **2 mm** anterior to the limbus **reduces 2 D** of the preoperative astigmatism.

- ❖ **3.2 mm OCCI** on the steep meridian
- ❖ **1 mm** anterior to the limbus reduces **2.25 D** of the preoperative astigmatism.
- ❖ **3.2 mm OCCI** on the steep meridian.
- ❖ **2 mm** anterior to the limbus reduces **2.5 D** of the preoperative astigmatism

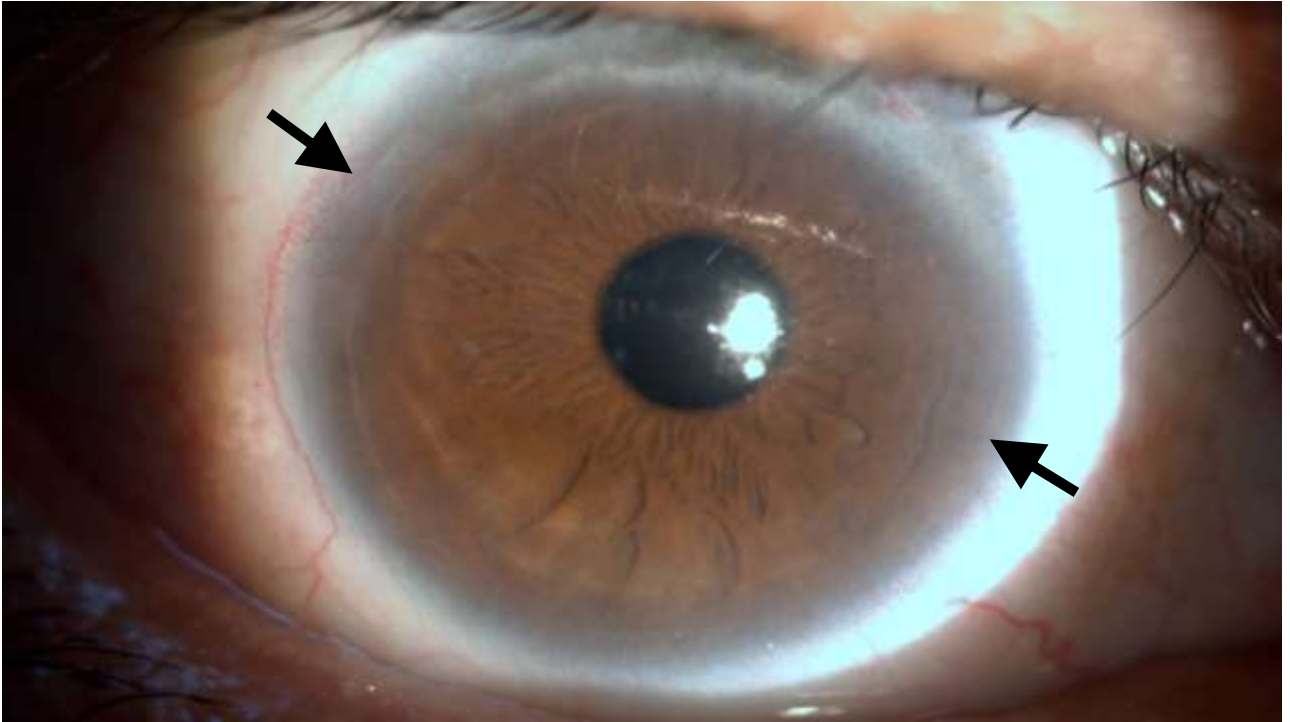
Post-surgery 4 Months



Pre CCI, OCCI



Post CCI, OCCI



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J Ophthalmic Vis Res. 2008 Apr; 3(2): 87-90. PMCID: PMC3589228
PMID: 23479528

**Opposite Clear Corneal Incisions versus Steep Meridian Incision
Phacoemulsification for Correction of Pre-existing Astigmatism**

Noushin Bazzazi, MD, Behzad Barzandeh, MD, Mari Kashani, MSc, and Maryam Rasouli, MD

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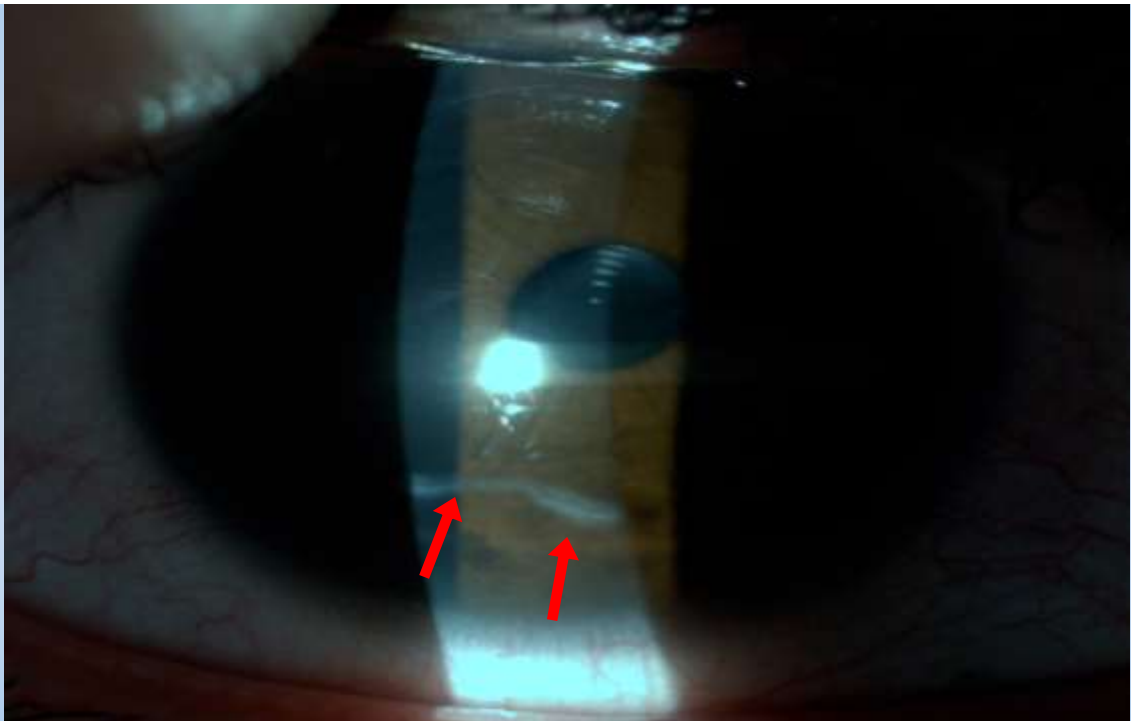
Abstract Go to: ☺

Purpose

To compare the efficacy of adding an opposite clear corneal incision (OCCT) on the steep meridian versus performing surgery on the steep meridian alone during phacoemulsification in reducing pre-existing corneal astigmatism.

CONCLUSIONS: The toric IOL tended to rotate significantly postoperatively. Visual acuity was good in both groups. Residual refractive cylinder was significantly lower in the toric IOL group.

- 1. Which is easier**
- 2. Cheaper**
- 3. More stable**
- 4. Non rotating 100%**
- 5. No capsular phimosis or changes that might change IOL position**
- 6. How can you correct the astigmatism with your multifocal IOL.**



7. No learning curve.

8. No evidence of increased incidence of infection postoperatively.

Predictable Nomogram

3.0 mm	CCI, OCCI	→	1.86 D	correction if	1mm	from limbus
3.0 mm	CCI, OCCI	→	2.00 D	correction if	2mm	from limbus
3.2 mm	CCI, OCCI	→	2.25 D	correction if	1mm	from limbus
3.2 mm	CCI, OCCI	→	2.50 D	correction if	2mm	from limbus

SN60WF
Alcon

IOL [D]
15.50
16.00
16.50

[D/r°]	7.47 / 45.19 @ 24
[D/r°]	6.95 / 48.53 @ 114
nm/D]	7.21 / 46.80
[D/r°]	3.34 @ 114
□	1.3375
[mm]	11.66

Template: Alcon Amo

Before**After**

-----6940-----

NAME M/F

08_APR_2019 PM 09:18

NO. 1333

FEB/ 3/2019 03:30

SN:4731614

VD=12.00mm

REF. DATA

VD: 12.00 CYL: (-)

<R>	S	C	A
-	1.50	- 3.75	26 8
-	1.50	- 3.50	26 8
-	1.50	- 3.50	26 8
<-	1.50	- 3.50	26>

<R>	S	C	A
-	0.00	- 1.75	20
-	0.50	- 1.50	15
-	0.25	- 1.50	15
-	0.25	- 1.50	15
-	0.25	- 1.50	15
S. E.	-	1.00	

ARTICLE

Rotational performance and corneal astigmatism correction during cataract surgery: Aspheric toric intraocular lens versus aspheric nontoric intraocular lens with opposite clear corneal incision



Sophie Maedel, MD, Nino Hirnschall, MD, Yen-An Chen, MD, Oliver Findl, MD, MBA

PURPOSE: To compare the astigmatism-reducing effect of an aspheric toric intraocular lens (IOL) and an aspheric nontoric IOL with an opposite clear corneal incision (OCCI) in cataract surgery.

CONCLUSIONS: The toric IOL tended to rotate significantly postoperatively. Visual acuity was good in both groups. Residual refractive cylinder was significantly lower in the toric IOL group.

WHAT WAS KNOWN

- Different toric IOL designs have been shown to be rotationally stable and to sufficiently correct corneal astigmatism during cataract surgery.
- Incisional techniques are alternatives to correct corneal astigmatism but have lower predictability than toric IOLs.

WHAT THIS PAPER ADDS

- The toric IOL and the nontoric IOL with an OCCI significantly reduced postoperative refractive cylinder in patients with low to moderate corneal astigmatism.
- Despite a large percentage of rotated toric IOLs, the postoperative UDVA in these eyes was good and the postoperative astigmatism was low.

< Previous Article **June 2000** Volume 26, Issue 6, Pages 803–805 Next Article >

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Opposite clear corneal incisions to correct pre-existing astigmatism in cataract surgery

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 PlumX Metrics

DOI: [https://doi.org/10.1016/S0886-3350\(00\)00378-3](https://doi.org/10.1016/S0886-3350(00)00378-3) 

Abstract Full Text Images References

Abstract

In cataract surgery, the clear corneal incision (CCI) has a small flattening effect on corneal curvature, which can be used to reduce pre-existing astigmatism (PEA). Adding an identical, penetrating CCI opposite the first one can enhance the flattening effect. The paired opposite CCIs (OCCIs) are placed on the steepest meridian axis to flatten it. One CCI is used to perform cataract surgery, and the opposite CCI is made to enhance the flattening effect on the cornea to modulate PEA. During the past 12 months, we have used 2.8 to 3.5 mm OCCIs in 33 eyes with PEA greater than 2.00 diopters (D) having cataract surgery. The mean astigmatism correction achieved with this technique was 2.06 D. This technique is simple and effective and yields stable results that rival those of arcuate keratotomy.

The OCCI technique has a potential application for the correction of astigmatism in general refractive surgery. Opposite clear corneal incision nomograms with variables such as width, length, and distance from the limbus will be needed for future applications.

Take home FACTS:

- *You can't debate on an event "having a stock of Toric IOLs with the same price of standard IOL".*
- *OCCI has an astigmatic effect.*
- *It could be less predictable than Toric IOLs but definitely of benefit.*
- *Patients with Monofocal IOLs need some astigmatism from -0.5 to -0.75 D to have depth of focus that can help in near vision.*

At the End:

CCI-OCCI

The cost effectiveness, easiness , repeatability, reproducibility ,less time consuming in preoperative and operative preparation ,

***With No Chance to re-admitt
the patient to the O.R for
rotational problems***

forgives the less predictability in low astigmatic error

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Thank You

