

Effect of ICL Implantation on ACD and IOP (A Comparative Study)

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Abstract

To evaluate the effect of ICL implantation on the ACD and IOP.

This study was on 39 eyes of 25 patients.

Age range was 20 - 43 years.

Corneal thickness mean was 537.54.

The reasons for ICL surgery were high myopia, post KP, and post cornea crosslinking.

Methods: All patients were underwent uneventful ICL implantation and were follow up for more than one year.

A comparison was done pre-operative and post-operative for the IOP using Goldmann applanation tonometer and ACD using Orbscan II z.

Results: The IOP was slight increased post ICL implantation from a mean of 12,62 mm Hg with 1,73 SD to a mean of 13.1 mm Hg with 1,76 SD. ACD was decreased from a mean of 3,11 mm with 0,359 SD pre-operative to 2.65 mm with 0.68 SD post-operative.

Conclusion: In spite of the fact, that ACD is decreased by the ICL implantation, but it is obviously not affect by any mean any organic or visual outcomes. Nevertheless, the IOP is not to be mentioned as a difference, that ICL can affect, in uneventful surgeries.

Keywords: *ICL Implantation; ACD; IOP*

Introduction

ICL got much popularity for treating moderate to high error of refractions, non-fit excimer surgery, post- keratoplasty, post ICR and CXL, in the last decade.

The reasons for its popularity were:

1. Any anesthesia type.
2. Fast surgery.
3. Rapid recovery.
4. Excellent results.
5. Treating difficult cases, easily.
6. Stable and safe on the long run.
7. Short learning curve.

The fact that led the ICL to lay in the sulcus, had an effect on the ACD and consequently the IOP, hence, this study came [1-6].

Purpose of the Study

To evaluate, the effect of ICL implantation on the ACD and IOP before and after the surgery, as long follow up study.

Patients and Methods

This study was on 39 eyes of 25 patients.

Age range was 20 - 43 years.

Corneal thickness mean was 537.54.

The reasons for ICL surgery were high myopia, post KP, and post CXL.

All patients underwent uneventful ICL implantation and were follow up for more than one year.

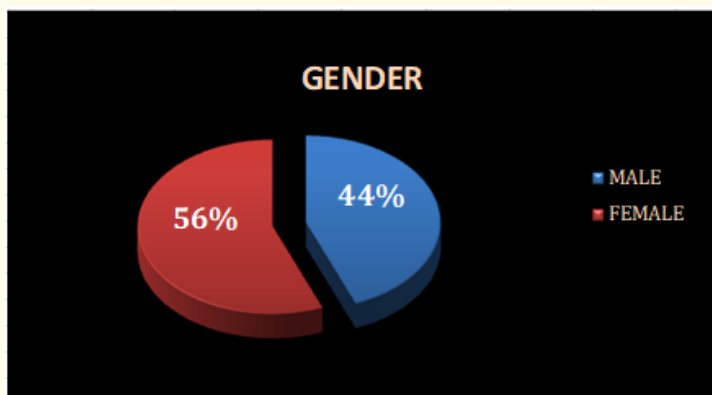
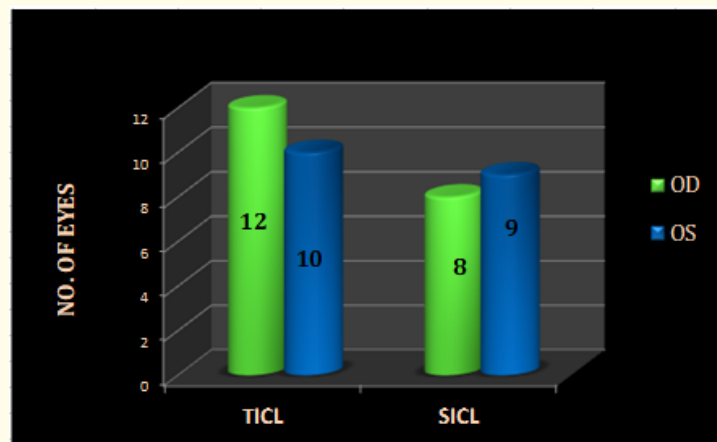
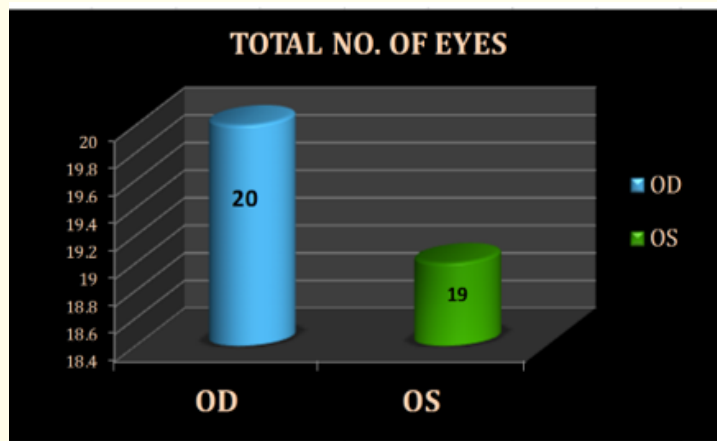
A comparison was done pre-operative and post-operative for the IOP using Goldmann applanation tonometer and ACD using Orbscan II z.

Patient demographics

PATIENT DEMOGRAPHICS			
	TORIC ICL	SPHERICAL ICL	Total
NO. OF PATIENTS	16	9	25 Patients
AGE	20-43 yrs old	21-42 yrs old	
Gender :			
Male	6	5	11 Male
Female	10	4	14 Female
Reason for ICL :	NO. OF EYES		
High Myopia	8 eyes	18 eyes	26 eyes
Post DLKP	5 eyes		5eyes
Post PKP	3 eyes		3 eyes
Post Crosslinking	5 eyes		5 eyes
			39 EYES

GENERAL DATA					
SURGERY	OD	%	OS	%	Total
TICL/SICL	20	51.28	19	48.72	39
TOTAL NO. OF EYES					
	NO. OFEYES	TICL	SICL		
OD	20	12	8		
OS	19	10	9		
TOTAL	39	22	17		
GENDER					
SURGERY	Male	%	Female	%	Total
TICL	6	37.5	10	62.5	16
SICL	5	55.55%	4	44.44%	9
AGE					
PATIENTS	RANGE	MEAN	SD		
25	20-43	28.12	± 6.36		

MEAN CORNEAL THICKNESS		
EYES	RANGE	MEAN
39	373-625	537.54
INCLUSION VISIT		
VISIT	EYES	%
PRE - OP	39	100%
1-3 MOS POST - OP	37	95%
4-6 MOS POST-OP	27	69.23%
7-9 MOS POST-OP	16	41.02%
10-12 MOS POST-OP	5	12.82%
> 1 YEAR POST - OP	21	53.85%
DIAGNOSIS	EYES	%
HIGH MYOPIA	26	66.66%
POST PKP	5	12.82%
POST DLKP	3	7.69%
CROSSLINKING	5	12.82%



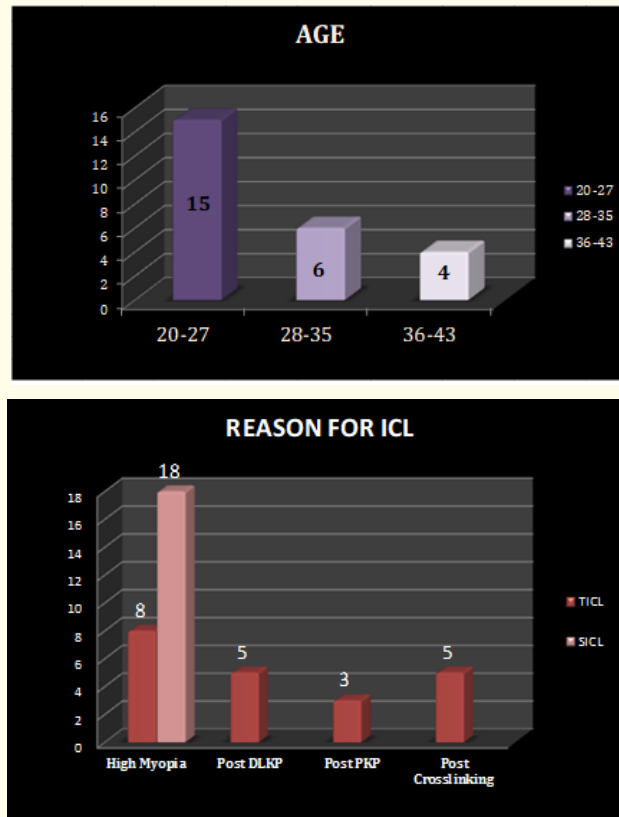


Figure 1

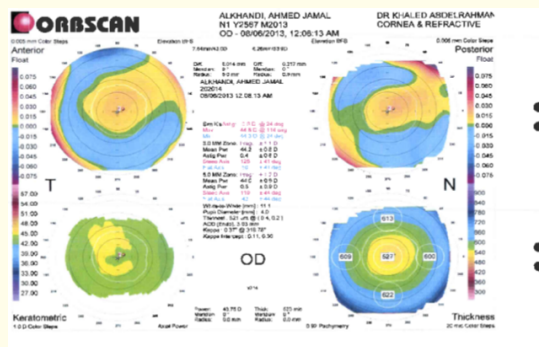
Results

The IOP was slight increased post ICL implantation from a mean of 12,62 mm Hg with 1,73 SD to a mean of 13.1 mm Hg with 1,76 SD. ACD was decreased from a mean of 3,11 mm with 0,359 SD pre-operative to 2.65 mm with 0.68 SD post-operative.

VISIT	ACD		IOP	
	MEAN	SD	MEAN	SD
PRE - OP	3.11	± 0.359	12.62	±1.73
1-3 MOS POST - OP	2.71	± 0.32	13.03	±2.35
4-6 MOS POST-OP	2.44	± 0.47	12.15	±1.63
7-9 MOS POST-OP	2.44	± 0.309	12.08	± 1.11
10-12 MOS POST-OP	2.71	± 0.125	14.25	±2.77
> 1 YEAR POST - OP	2.65	± 0.68	13.1	±1.76

Figure 2

Material samples of topography



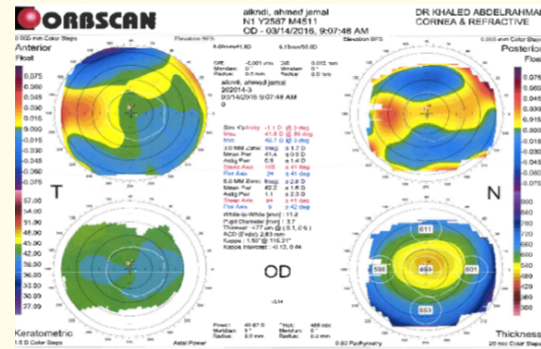


Figure 3

Statistical analysis

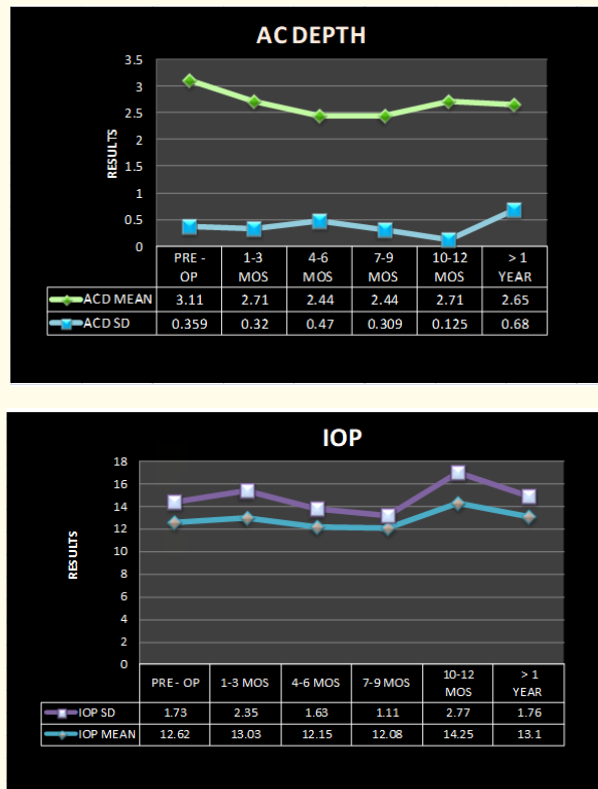


Figure 4

Conclusion

In spite of the fact, that ACD is decreased by the ICL implantation, but it is obviously not affect by any mean any organic or visual outcomes. Nevertheless, the IOP is not to be mentioned as a difference, that ICL can affect, in uneventful surgeries.

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