

USE OF FEMTOSECOND LASER- ASSISTED CATARACT SURGERY IN COMPLEX CASES

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Financial Disclosures:

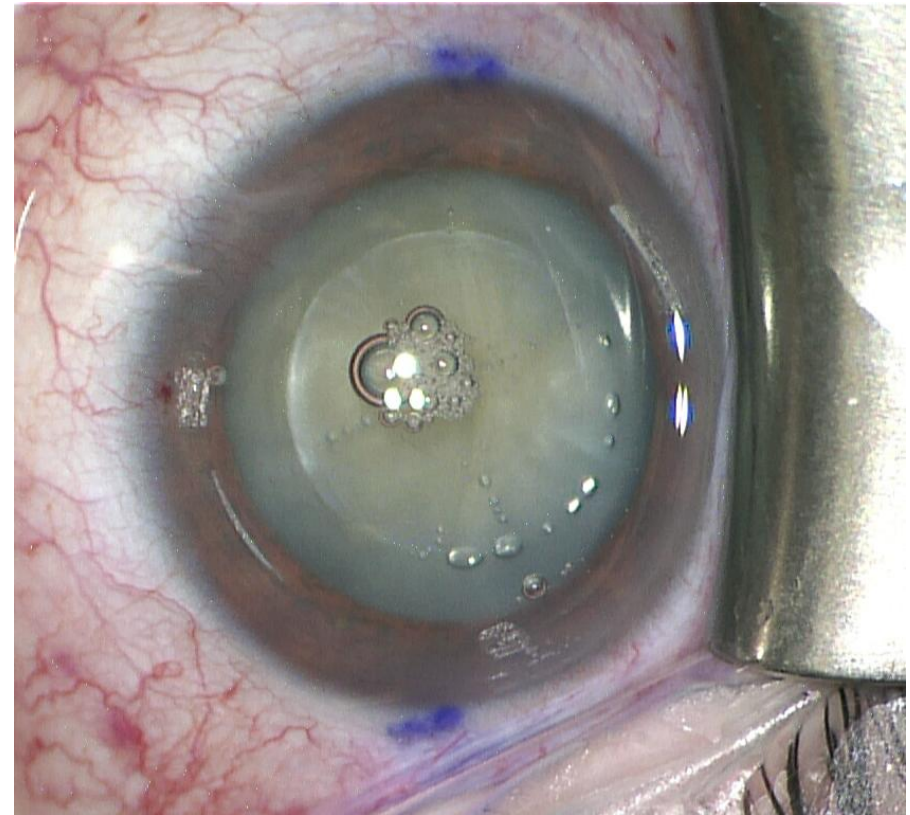
*Beeran Meghpara, MD and Michael J. Taravella have no financial interests in the subject matter of this poster.
Richard S. Davidson, MD is a consultant for Alcon*

Purpose

- To evaluate the utility of femtosecond laser assisted cataract surgery in complex cases

Methods

- Retrospective chart review of 17 patients
 - Mean age 58 years (range 27 to 81 years)
- LenSx femtosecond laser (Alcon) assisted complex cataract surgery performed between 2012 and 2013
- Main outcome measures were complications with the anterior capsulotomy, other surgical complications, and post-operative best corrected visual acuity



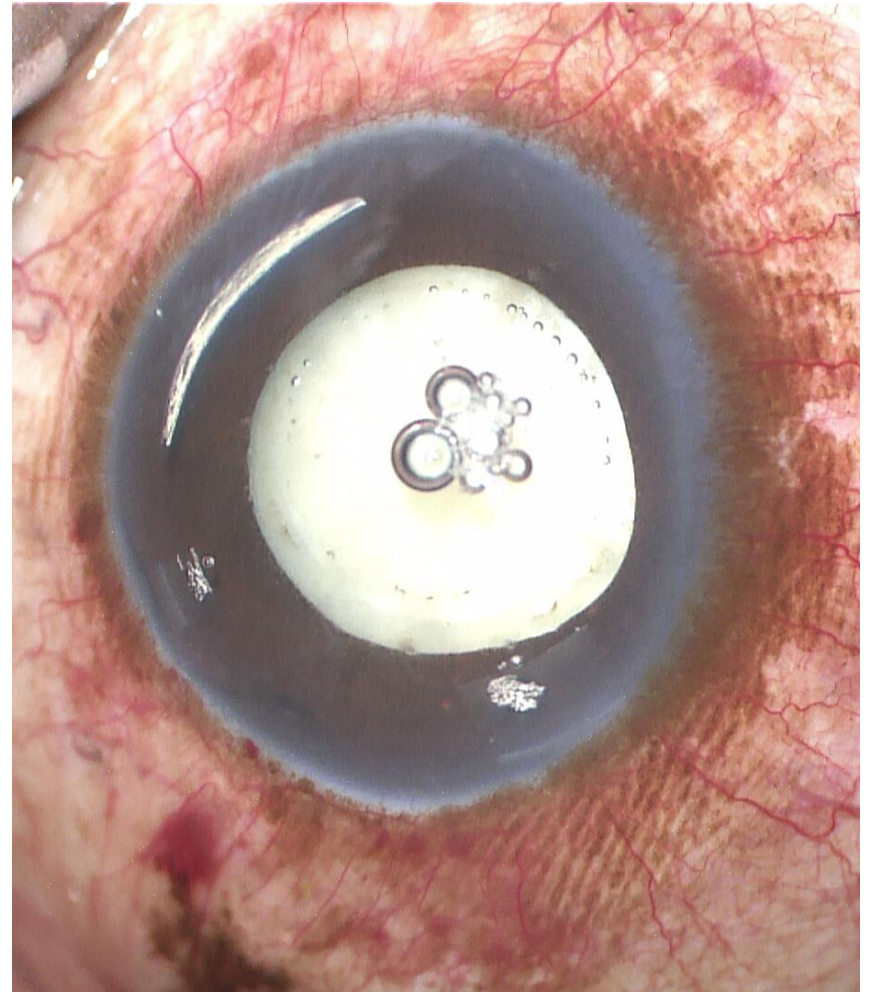
Patient Characteristics

Patient	Age	Cataract Type
1	51	Dense White
2	50	Dense White
3	75	Dense White
4	55	Dense White
5	53	Dense White Traumatic
6	58	Soft White
7	45	Soft White
8	64	Soft White
9	62	Soft White

Patient	Age	Cataract Type
10	59	Soft White
11	48	Soft White
12	60	Soft White
13	56	Mature Brunescent
14	75	Mature Brunescent
15	55	Mature, Previously Congenital
16	81	Pseudoexfoliation with phacodonesis
17	27	Central Anterior Capsular Scar

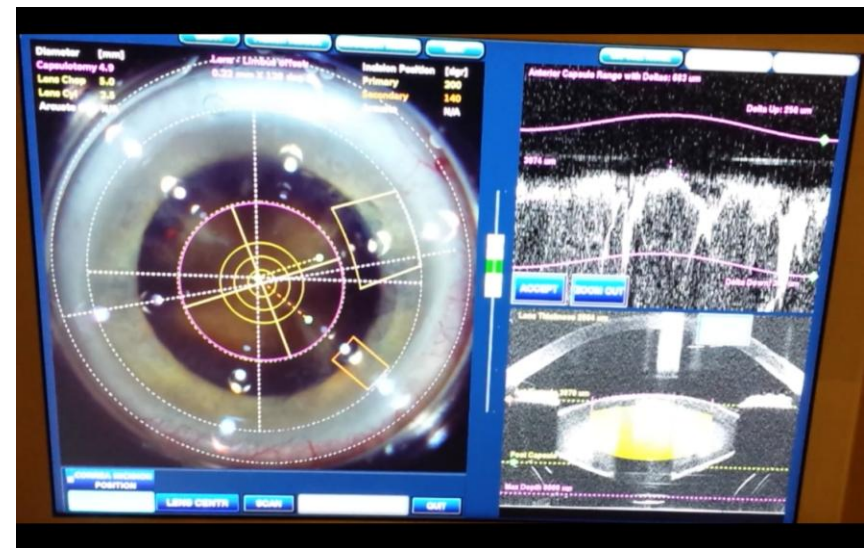
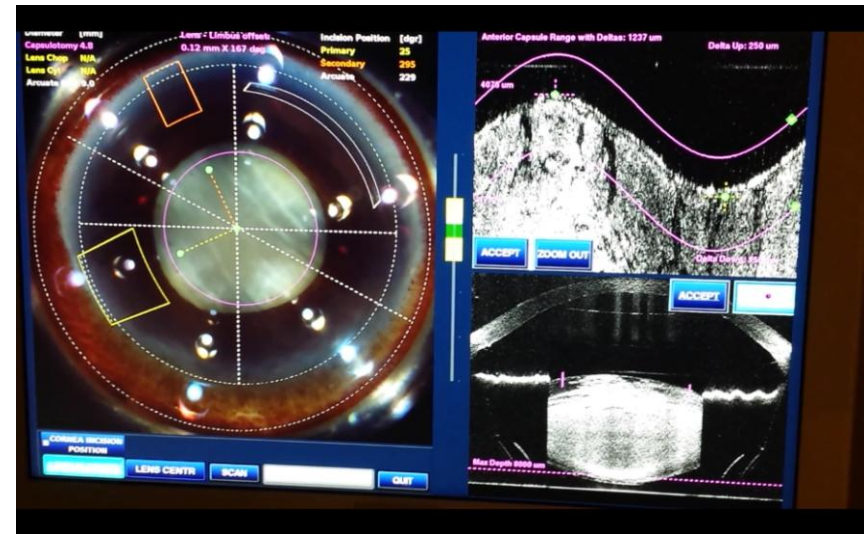
Results

- 13 of 17 patients had a pre-operative visual acuity of count fingers or worse (range 20/60 to light perception).
- A successful complete capsulotomy was achieved in 14 of 15 cases.
 - Suction loss occurred in one case resulting in an incomplete capsulotomy



Results

- Lens fragmentation was attempted on four cases
- A posterior capsular tear occurred during one of these cases on a brunescient lens
- Two additional cases were complicated by a posterior capsular tear.
- All patients had a better post-operative best corrected visual acuity compared with pre-operative acuity
 - 81% of patients with sufficient follow-up achieved vision of 20/40 or better.



Results

Case	Cataract Type	Pre BCVA	Post BCVA	LenSx Procedure	Complication	Comments
1	Dense White	HM	20/20	Cap, Nuc, Wounds	None	
2	Dense White	LP	20/20	Cap	None	
3	Dense White	LP	20/40	Cap	None	1+ PCO
4	Dense White	HM	20/50	Cap, Wounds	None	
5	Dense White Traumatic	LP	20/70	Cap, Wounds	PC Tear, ACIOL	2 weeks post PPV for RLF and CME
6	Soft White	CF	20/20	Cap, Wounds	None	
7	Soft White	HM	20/20	Cap	None	
8	Soft White	CF	20/40	Cap	None	
9	Soft White	20/150	20/30	Cap	Suction loss	Partial capsulotomy
10	Soft White	LP	20/40	Cap, Wounds	None	Paracentral corneal scarring
11	Soft White	HM	20/20	Cap, Wounds	None	
12	Soft White	20/150	20/20	Cap, Nuc, Wounds	None	
13	Mature Brunescent	CF	20/60	Cap, Wounds	PC Tear, ACIOL	
14	Mature Brunescent	HM	20/20	Cap, Wounds	None	ECCE conversion, very dense lens
15	Mature, Previously Congenital	HM	20/250	Cap, Nuc, Wounds	PC Tear, SIOL	Amblyopia from congenital posterior polar cataract
16	PXE w/ phacodonesis	20/40	20/20	Cap, Nuc, Wounds	None	
17	Central Ant Capsular Scar	20/100	20/20	Cap, Wounds	None	

HM = hand motion, LP = light perception, CF = count fingers, Cap = Anterior Capsulotomy, Nuc = Nucleus Chop, PXE = pseudoexfoliation

Conclusions

- The femtosecond laser is an effective tool for creating an anterior capsulotomy in challenging cases.
 - Especially useful in safely creating a capsulotomy in cases with zonular instability and phacodonesis
- The safety and utility of lens fragmentation using the femtosecond laser in complex cases, particularly dense lenses, is yet to be determined.
 - Of the three cases where lens fragmentation was done, one was complicated by a posterior capsular tear. The patient had a posterior polar cataract documented as a child. This potential area of weakness in the posterior capsule may be vulnerable to damage during nucleus fragmentation by the femtosecond laser