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Results of 50 Phacoemulsification Surgeries with Injectable Lens Implantation at Indus Medical College Hospital Tando Mohammad Khan

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Abstract

Purpose: To evaluate the results of phacoemulsification surgeries at department of ophthalmology at Indus Medical College Hospital Tando Mohammad Khan.

Material and Methods: This study in which only 50 eyes of 43 patients were included to treat by phaco emulsification was conducted from 1st January to 30th June 2016. 31 patients were male whereas 12 were female. 20 were right eyes, 16 were left while 7 patients were undergone bilateral phaco surgeries within 7 to 16 days.1 patient was in age group C, another 1 was in group D, 8 were in group E, 12 were in group F and remaining 21 were in group G. 21 were suffering from diabetes, 12 were hypertensive, 2 were with cardiac problems using pace maker and 2 was involved with HCV infection. Patients suffering from ocular diseases: open angle glaucoma 3, pseudoexfoliation 4, pigment dispersion syndrome 1, chroniciritis 2, cholestrosisbulbi 1, asteroid hyalosis 1, age related macular degeneration 2 Eyes were dilated with mydriacil/phenylephrine eye drops, local anesthesia as retrobulbar as well as facial block (von lint technique) were given using 2% xylocaine inj without adrenaline. 2.8mm incision, capsulorexhsis with bent 27 gauge needle, followed by hydrodissection and in some hydrodelienation with small caliber irrigation cannula, copious 2% methylcellulose used to save endothelial cells as well as to maintain anterior chamber, all 4 steps of phaco followed with divide and conquer method and finally injectable intraocular lens implanted. Every operation ended with subconjunctival injection of dexamethasone 2mg plus gentamicin 20mg.

Results: 37 eyes gained 20/20 visual acquity on first post-operative day, 3 eyes gained 20/40, 5 gained 20/60 which over a period of five days improved to 20/20 after using topical prednisolone 1mg along with moxifloxacin eye drops, 3 gained 20/80 corrected with glasses, 2 were having 20/100 because of macular diseases.

Conclusion: In our experience phacoemulsification is an excellent technique which saves time, gives early rehabilitation depending upon the patience, experience and skill of surgeons.

Keywords: Cataract; Phacoemulsification results

Introduction

The term cataract is defined as an opacification of crystalline lens, having different morphological types; subcapsular; anterior and posterioir, cortical, nuclear opacification [1]. Cataract further divided according to density: grade 1 to grade 4. Cataract leads to decreased or blurring of vision.

Mostly senile [2] with other important causes like trauma, dibetes, myotonic dystrophy, atopic dermatitis, neurofibromatosis type 2, steroid induced, chronic iritis, high myopia, retinitis pigmentosa, gyrate atrophy, Stickler syndrome etc. [3].

With the passage of time lens increases in weight and thickness as new layers of cortical fibers are formed concentrically, the lens nucleus undergoes compression and hardening (nuclear sclerosis). Crystalline (lense proteins) are changed by chemical modifications and aggregation into high-molecular-weight proteins [4].

The only treatment for cataract is surgery either large incision ECCE or phacoemulsification, small incision early rehabilitation and with good visual outcome. The technique and results of cataract surgery have changed dramatically during the past three decades. In all over the world we have moved from

intracapsular cataract extraction as the preferred technique to almost exclusively extracapsular techniques. Smaller incisions have become the standard, with phacoemulsification now being the method of choice for most of surgeons [5].

Material and Methods

This study in which only 50 eyes of 43 patients were included to treat by phaco emulsification with injectable intraocular lens implantations at Indus Medical College Hospital Tando Mohammad Khan from 1st January to 30th June, 2016. All eyes were dilated prior surgery with mydriacil, phenylephrine eye drops, local anesthesia given using retrobalbur and facial (von lint) with 2% lidocaine (xylocain injections). Phaco done with infinity (Alcon) machine under Taggaki microscope.

Table 1: Gender.

S.No	Gender	No. of Patients	%
1	Male	31	72.09
2	Female	12	27.9

Out of 43 patients 12 were females, 31 were males (Table 1), patients were divided into different age groups as: there was no patients in group A and B, group C and D have only one patient respectively, group E includes 8, group F includes 12 and group G includes 21 (Table 2).

Table 2: Age Groups.

Age Groups	Ages	No. of Patients	Percentage %
A	0-10 yrs	Nil	0
B	11-20yrs	Nil	0
C	21-30 yrs	1	2.32
D	31-40 yrs	1	2.32
E	41-50 yrs	8	18.6
F	51-60 yrs	12	27.9
G	61-70 yrs	21	48.83

Table 3: Laterality.

S. No.	Laterality	No. of Patients	%
1	Right Eye	20	46.51
2	Left Eye	16	37.2
3	Both Eyes	7	16.27

Table 4: Systemic Diseases.

S.NO	Systemic Diseases	No. of Patients	%
1	Diabetes	21	48.83
2	Hypertention	12	27.9
3	Cardiac Problem Using Pacemacker	2	4.65
4	HCV	2	4.65

Out of 50 eyes 20 were right, 16 left and 7 were both eyes (Table 3). 37 (86.04%) Patients Were suffering with systemic diseases like diabetes (48.83%), hypertention (27.90%), cardiac problem, using pacemaker (4.65%), HCV (4.65 %) underwent surgery after having fitness from their physicians (Table 4) 14 (32.55%). Patients were suffering from ocular diseases like Glaucoma (6.97%), pseudoexfoliation (9.30 %), Pigment dispersion syndrome (2.32%), old healed iritis with peripheral ant Synaechae (4.65%), Cholesterosisbulbi (2.32%), asteroid hylosis (2.32%), Age related macular degeneration (4.65%) (Table 5).

Table 5: Ocular Diseases.

S.NO	Ocular Diseases	No. of Patients	%
1	Chronic Simple Glaucoma	3	6.97
2	Pseudoexfoliation	4	9.3
3	Pigment Dispersion Syndrome	1	2.32
4	Chronic Iritis	2	4.65
5	Cholesterosis Bulbi	1	2.32
6	Asteroid Hyalosis	1	2.32
7	Macular Degeneration, AMD	2	4.65

After asceptic techniques, drapping and using 2 drops of 10% povidine solution instilled into eye, after 1 minute copious irrigation done, incision started with 2.8mm phaco knife, capsulorexhsis done with 27 gauge bent needle, hydrodissection and in some hydrdileanation using small caliber irrigation cannula, copious use of 2% methylcellulose to save endothelium as well as to maintain anterior chamber. All 4 steps of phaco followed and finally injectable intraocular lens implanted. Wound closed with stromal hydration. Every operation finished with sub conjunctival injection of Dexamethasone 2mg plus gentamicin 20mg, and eye kept pached for 24 hours.

Results

50 eyes of 43 patients were undergone surgery by phacoemulsification with injectable intraocular lens implantation, 37 eyes (74%) improved visual acuity to 20/20 at first postoperative day, 3 eyes (6%) improved upto 20/40, 5 eyes (10%) upto 20/60, 3 eyes (6%) upto 20/80, and 2 eyes (4%) improved upto 20/100 (Table 6). Figure 1 a, b, c shows injectable lens implantation during one of our surgery.

Table 6: Visual out come.

S.No	Visual Acuity	No. of Eyes	%
1	20/20	37	74
2	20/40	3	6
3	20/60	5	10
4	20/80	3	6
5	20/100	2	4

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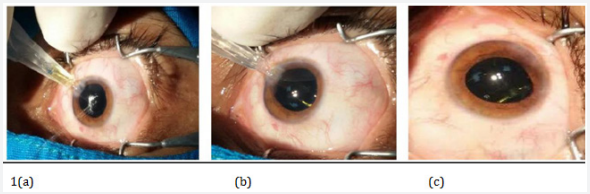

Figure 1: a,b,c Showing Foldable Intraocular Lens Implantation during one of our Surgery.

Discussion

Phacoemulsification is a very safe and less time taking technique depending upon good dilation of pupil pre- operative and during surgery as well as the patience, experience and skill of surgeons. It is established that the smaller phacoemulsification wound gives less induced astigmatism, faster visual rehabilitation and improved wound security than ECCE [6-11]. Smaller wound heals more rapidly with less risk of leakage, viscoelastic do not leave the eye through small incision [12]. 37 (74 %) of my patient improved visual acuity upto 20/20 on first and secondday, 3 (6%) developed striate keratitis and treated with topical steroid and regained 20/20 on 5th post operative day. In 5 (10%) visual acuity corrected.

With glasses with in -1.50 D sphere and 0.75 cylinder at 90degrees, 2 (4%) who were suffering with age related macular degeneration remained after BCVA at 20/100. In our study not a single case suffered with post operative endophthalmitis same as in a study done by Cooper et al. [13].

Out of these 50 eyes only 3 developed striate keratitis, reason was hard nucleus more than grade 3 density needed high phaco power and time by the technique divide and conquer same as described by Gimbel [14]. Topical steroids were being prescribed and on 5th postop day vision become 20/20. Though it was fairly high 20% in one study by Popiela G et al. [15] but in our experience it was only 6 %, a grade 3 nucleus (severely dense) and long absolute phaco time as independent predictors for endothelial cell loss [16]. Phacoemulsification in the capsular bag by directing probe away from the corneal endothelium and keeping the lens fragments at deeper plane are the measures which would be helpful in minimizing the chances of corneal edema and striate after phacoemulsification same as suggested by Zetterstrin C [17] and Pirazzoli G et al. [18].

Conclusion

Small incision surgery such as phacoemulsification with injectable intraocular lens implantation is a very safe and less time taking technique which depends upon the experience and skill of surgeon who strictly follows selection and exclusion criteria and with a good knowledge when to abandon or convert the technique and always keeps the lens fragments in the capsular bag with the phaco tip directed away from endothelium, do not follow the lens fragments near the posterior capsule, allow fragments' to follow the tip.

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