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Outcome of 100 phacoemulsification surgeries at Mohammad Al-Dossary hospital Khobar, Saudi Arabia

Abstract

Purpose: To evaluate the outcome of phacoemulsification surgeries at department of ophthalmology, Mohammad Al-Dossary Hospital Khobar, Saudi Arabia.

Materials and methods: 100 eyes of 87 patients were included in this study that was conducted from 1st December 2014 to 30th November 2015. 74 patients were male whereas 13 were female. 40 right eyes, 34 left eyes while 13 patients were undergone bilateral phaco surgeries within 7 to 16 days.1 patient was in age group C, another 1 was in group D, 16 were in group E, 33 were in group F and remaining 36 were in group G. 41 were suffering from diabetes, 33 were hypertensive, 3 were with cardiac problems using pace maker and 1 was involved with HCV infection. Patients suffering from ocular diseases: open angle glaucoma 5, pseudoexfoliation 6, pigment dispersion syndrome 2, chronic iritis 3, Cholesterolosis bulbi 2, asteroid hyalosis 1, age related macular degeneration 3. All were dilated with mydriacyl/phenylephrine eye drops, local anesthesia as retrobulbar as well as facial block (von lint technique) were given using 2% xylocaine injection without adrenaline. 2.8 mm incision, capsulorhexis with bent 27 gauge needle, followed by hydrodissection and in some hydrodelineation 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 IOL implanted. Every operation ended with subconjunctival injection of dexamethasone 2mg plus gentamicin 20mg.

Results: 59 eyes gained 20/20 visual acquity on first post-operative day, 23 eyes gained 20/40, 10 gained 20/60 which over a period of five days improved to 20/20 after using topical prednisolone 1mg along with moxifloxacin eye drops, 5 gained 20/80 corrected with glasses, 3 were having 20/100 because of macular diseases.

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

Keywords: nisar khan, cataract, phacoemulsification results, Mohammad Al-Dossary Hospital, Khobar

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Introduction

Cataract is being defined as an opacification of crystalline lens, having morphological types; subcapsular; anterior and posterior, cortical, nuclear opacification.[1] Opacity further divided according to density: grade 1 to grade 4. Symptoms of cataract are decreased/blurring of vision. Mostly senile[2] with other important causes like trauma, diabetes, myotonic dystrophy, atopic dermatitis, neurofibromatosis type 2, steroid induced , chronic iritis, high myopia, retinitis pigmentosa, gyrate atrophy, Stickler syndrome etc.[3] As the lenses ages, it increases in weight and thickness as new layers of cortical fibers are formed concentrically, the lenses nucleus undergoes compression and hardening (nuclear sclerosis). Crystalline (lenses 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

100 eyes of 87 patients were included in this study treated by phaco emulsification with injectable IOL implantations at Mohammad Al-Dossary Hospital Khobar, Saudi Arabia from 1st December 2014 to 30th November 2015. All eyes were dilated prior surgery with mydriacyl, phenylephrine eye drops, local anesthesia given using retrobulbar and facial (von lint) with 2% lidocaine (xylocaine injections). Phaco done with AMO's Signature machine under zeiss microscope. Out of 87 patients 13(14.94%) were females, 74(85.05%) 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 16, group F includes 33 and group G includes 36 (Table 2).

Table 1 Gender

S. No	Gender	No. of Patients	%
1	Male	74	85.05
2	Female	13	14.94

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	1.14
D	31-40 yrs	1	1.14
E	41-50 yrs	16	18.39
F	51-60 yrs	33	37.93
G	61-70 yrs	36	41.37

Out of 100 patients 40(45.97%) were right eyes, 34(39.08%) left eyes and 13(14.94%) were both eyes (Table 3). 78 Patients were suffering with systemic diseases like diabetes (47.12%), hypertension (37.93 %), cardiac problem, using pacemaker (3.44%), HCV (1.14 %) underwent surgery after having fitness from their physicians (Table 4). 22 patients were suffering with ocular diseases like Glaucoma (5.74%), pseudoexfoliation (6.89 %), Pigment dispersion syndrome (2.29 %), old healed iritis with peripheral ant. Synechiae (3.44%), Cholesterolosis bulbi (2.29%), asteroid hyalosis (1.14%), Age related macular degeneration (3.44 %) (Table 5).

Table 3 Laterality

S. No.	Laterality	No. of Patients	%
1	Right Eye	40	45.97
2	Left Eye	34	39.08
3	Both Eyes	13	14.94

Table 4 Systemic diseases

S. No	Systemic Diseases	No. of Patients	%
1	Diabetes	41	47.12
2	Hypertension	33	37.93
3	Cardiac Problem Using Pacemaker	3	3.44
4	Hcv	1	1.14

Table 5 Ocular diseases

S. No	Ocular Diseases	No. of Patients	%
1	Chronic Simple Glaucoma	5	5.74
2	Pseudoexfoliation	6	6.89
3	Pigment Dispersion Syndrome	2	2.29
4	Chronic Iritis	3	3.44
5	Cholesterolosis Bulbi	2	2.29
6	Asteroid Hyalosis	1	1.14
7	Macular Degeneration, AMD	3	3.44

After aseptic techniques, draping and using 2 drops of 5% povidone-iodine solution instilled into conjunctival sac, after 3 minutes copious irrigation done, incision started with 2.8mm phaco knife, capsulorhexis done with 27 gauge bent needle, hydrodissection and in some hydrodelineation using small caliber irrigation cannula, copious use of 2% methyl cellulose to save endothelium as well as to maintain anterior chamber. All 4 steps of phaco followed and finally injectable IOL 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

100 eyes of 87 patients were undergone surgery by phacoemulsification with injectable IOL implantation, 59 eyes (59%) improved visual acuity to 20/20 at first postoperative day, 23 eyes (23%) improved up to 20/40, 10 eyes (10%) up to 20/60, 5 eyes (5%) up to 20/80, and 3 eyes (3%) improved up to 20/100 (Table 6). All above vision were uncorrected visual acuity, only 5 were corrected by glasses remaining were without any correction.

Table 6 Visual outcome (Ucva)

S. No	Visual Acuity	No. of Eyes	%
1	20/20	59	59
2	20/40	23	23
3	20/60	10	10
4	20/80	5	5
5	20/100	3	3

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] 82 (82%) of my patient improved visual acuity up to 20/20 on first and second day, 10(10%) developed striate keratitis and treated with topical steroid and regained 20/20 on 5th post operative day. In 5 (5%) visual acuity corrected with glasses with in -1.50 D sphere and -0.75 cylinder at 90 degrees, 3(3%) who were suffering with age related macular degeneration remained after BCVA at 20/100.

Not a single case suffered with post operative endophthalmitis same as in a study done by Cooper et al.[13] Out of 100, 10 eyes 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 post-op 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 10 %, 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]

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Conclusion

Phacoemulsification with injectable IOL implantation is a very safe technique depending upon experience and skill, strictly follow selection and exclusion criteria and with a good knowledge when to abandon or convert the technique, always keep the lens fragment in the capsular bag with the phaco tip directed away from endothelium, do not follow the lens fragment near the posterior capsule better to allow fragments to follow the tip.

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None.

Conflicts of interest

Author declares that there is no conflict of interest.

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