

Experience of Topical Anaesthesia in Phacoemulsification Verses ECCE with IOL Cases

Muhammad Rizwan Ullah, Mohammad Mateen Amir, Aqil-ur-Rehman Nadeem
Department of Ophthalmology, Lahore General Hospital, Lahore

ABSTRACT

Purpose: We studied 100 cases of phacoemulsification with intraocular lens (PHACO IOL) verses 100 cases of extracapsular cataract extraction (ECCE) with intraocular lens implant (IOL) to know the acceptability of topical and intracameral anaesthesia. **Material and method:** Topical drops of proparacaine were used fifteen minutes before surgery for five times at regular interval. 2ml of 2% xylocaine diluted with 3ml of ringer lactate was used for topical enhancement when needed. 2ml of preservative free bupicaine was injected in each 1000ml of ringer lactate solution. 200 patients were done with this method in which 100 cases were PHACO IOL and remaining 100 cases were ECCE with IOL. Pain was assessed by an independent observer and scored on criteria assigned. **Results:** Out of 100 cases of PHACO IOL 97% was very happy having zero score or one score. 84% have zero score and 13% have one score. 2% of patients suffered mild pain. 1% of patients suffered moderate pain. In ECCE with IOL, out of 100 patients 93% were very happy with zero score in 78% and one score in 15% of patients. 5% attain score two were just happy. 2% of patients suffered moderate pains were not happy. **Conclusion:** Topical anaesthesia avoids most of the complications associated with retrobulbar, peribulbar, or subtenon injections. It is a safe method for both PHACO IOL and ECCE with IOL.

INTRODUCTION

The day case surgery is now a routine everywhere. It ensures early rehabilitation and decreases the hospital acquired infections. Topical anaesthesia saves time, patient discomfort and worries about the puncture of eyeball by needles and facial puncture which are particularly painful. The retrobulbar injections are associated with many complications including retrobulbar haemorrhage, globe perforation, optic nerve sheath haemorrhage and retinal detachment.

Over the last ten years a number of methods have been compared, these include peribulbar, subtenon, topical and intracameral injections with or without oral analgesia preoperatively¹⁻¹¹. Lidocaine ophthalmic gel is also in use by some surgeons.¹² Now a days topical with intracameral anaesthesia with xylocaine is used by most of the surgeons.⁴⁻⁷ This is especially very good in PHACO IOL cases but it is also good in ECCE with IOL cases.¹³ In our country still a large number of surgeons especially

in rural areas are doing surgery by this method. This study compares the pain response of patients done by same surgeon by these two methods.

MATERIAL AND METHODS

A prospective study was done at AL-Khidmat Hospital Mansoor. A total of 200 cases, out of which 100 were PHACO IOL and 100 were ECCE with IOL. All patients were operated under topical anaesthesia with intracameral anaesthesia. One tablet of diazepam 5mg was given to every patient two hours before surgery. 0.5% proparacaine hydrochloride eye drops, one drop at every three minute interval for five times was applied preoperatively. 2ml of preservative free bupivacaine was injected in each ringer lactate used. Intracameral injection of 2% xylocaine solution diluted to 0.5% with ringer lactate solution was given in every case. This concentration is safe for corneal epithelium and provides adequate anaesthesia to uveal tissue for pain free surgery. During

operation 2ml of 2%xylocaine diluted with 3ml of ringer lactate were sprayed by assistant whenever needed.

After all aseptic precautions operation was started and tunnel at anterior limbus was made by 3.2mm or 2.8mm knife in phaco cases.27gauge needle with bent tip was used for capsulorhexis and 15degree knife to make a side port. Phaco power was 60 and vacuum ranges from 200 to350mmHg with flow rate of 30-34ml/hr.Cortex aspirated with irrigation aspiration cannula and IOL implanted by enlarging incision with 5.5mm knife. Foldable IOL implanted without enlarging the incision with injector.

ECCE with IOL cases were started with 11NO B.P. blade corneal section given in two steps. Capsulotomy was done with 27gauge needle. Nucleus expressed and irrigation aspiration done with simcoe cannula. Wound was sutured with 10/0 nylon.

Pain was assessed by the following criteria.

- A 0 Score No pain or pain that is relieved by counseling the patient again during surgery. These patients were assured by saying that only slight touch and pressure sensation will be felt. These patients then remain quiet and some even goes into sleep.
- B 1 score Mild pain relieved by topical spray of xylocaine.
- C 2 score Mild to moderate pain relieved by intracameral injection of xylocaine.
- D 3 score Severe pain

These are usually nervous patients. They squeeze their lids inproportionate to pain. Facial nerve block with 4-5ml of xylocaine was used in these cases.

RESULTS

Topical anesthesia was liked by almost all of our patients. Surgery was done smoothly on verbal commands.

Table 1: Age distribution.

Age (Years)	Phaco with IOL	ECCE with IOL
0-10	1	0
10-20	2	0
20-30	2	0
30- 40	8	5
40-50	13	11
50-60	29	25
60-70	35	37
Above 70	10	22

Table 2: Pain score.

Score	Zero Score	One Score	Two Score	Three Score
PHACO IOL	84%	13%	2%	1%
ECCE IOL	78%	15%	5%	2%

DISCUSSION

Although there is no akinesia in topical anaesthesia most of the surgeons today are comfortable with this technique especially in phacoemulsification cases as compared to ECCE with IOL cases. We are using topical anesthesia since 1998.¹³ Most of the complications like increased intraocular pressure and iris prolapse, conjunctival swelling, vitreous loss associated with subtenon injections can be avoided with topical anaesthesia. Retrobulbar injections also carry the risk of globe perforation and retrobulbar haemorrhage.

Out of 100 patients of PHACO with IOL 97% were very happy only 3% of patients feel pain which was relieved by repeating the intracameral injection of xylocaine. One patient needed facial block. In ECCE with IOL 93% of patients were very happy. Intracameral injection of xylocaine was repeated in 5% of patients while 2 patients needed facial block. Facial block was given by using 5ml disposable syringe and injecting xylocaine in V or Y fashion around orbit over the drape. The syringe discarded after that. Only discomfort for surgeon is

movement of eyeball. By counseling of patients, majority stops moving their eyeballs. It is advisable to carefully watch the movements of eyeball. Practically no capsular rent and vitreous loss occur in our last 200 cases. Stitches with 10/0 Nylon in ECCE with IOL cases was difficult in non cooperative patients and one may have to cut and reapplied the stitch.

CONCLUSION

Topical anaesthesia emerges as a great help in majority of patients. Only very few anxious patients feel pain during surgery. Counseling is very important before surgery and during surgery. On questioning about pain most of the patients told that they feel pressure and not actually pain especially doing ECCE and when performing expression of nucleus. In nervous patients' intracameral injection of xylocaine during surgery helps in relieving the pain.

Because a large number of cases in our country are still done by ECCE with IOL we recommend at least to change the way of anaesthesia for comfort of patients and to avoid complications of other invasive procedures. This would save time and expense in addition.

REFERENCES

1. Rondrigues PA, Valve PJ, Cruz LM, et al. Topical anaesthesia verses subtenon block for cataract surgery: Surgical condition and patient satisfaction. *Eur J Ophthalmol*, 2008; 18(3):356-60
2. Ryu JH, Kim M, Bank JH, et al. A comparison of retrobulbar block, sub-tenon block, and topical anaesthesia during cataract surgery. *Eur J Ophthalmol* 2009; 19(2):240-6
3. Tinnungwattana U, Gorvanich S, Kulvichit K, et al. Combined deep topical and subconjunctival anaesthesia for extracapsular cataract extraction in a rural eye camp. *Anaesthesia Analog*. 2009; 109(6):2025-60
4. Omulecki W, Laudanska-Olszewska I, Synder A. Factors affecting patient cooperation and level of pain perception during phacoemulsification in topical and intracameral anaesthesia. *Eur J Ophthalmol*, 2009; 19(6):977-83.
5. Lofoco G, Clucci F, Bardocci A, et al. Efficacy of topical plus intracameral anaesthesia for cataract surgery in high myopia: randomized controlled trial. *J Cataract Refract Surg* 2008; 34(10):1664-8
6. Sanjiv Kumar Gupta, Ajay Kumar, Deepak Kumar, et al. Manual small incision cataract surgery under topical anaesthesia with intracameral lignocaine: Study on pain evaluation and surgical outcome. *Indian J Ophthalmol* 2009; 57(1):3-7
7. Ho AL, Zakrzewski PA, Braga-Mele R. The effect of combined topical-intracameral anaesthesia on neuroleptic requirements during cataract surgery. *Can J Ophthalmol*. 2010; 45(1):52
8. Kaluzny BJ, Kazmierczak K, Laudenska A, et al. Oral acetaminophen (paracetamol) for additional analgesia in phacoemulsific. *J cataract refractive surgery* 2010; 36(3):402-6
9. Fazal MR, Forghani Z, Aghadoost D, et al. Retrobulbar verses topical anaesthesia for phacoemulsification. *Pak J Biol Sci*. 2008; 11(19):2314-9
10. Sayed Imtiaz Ali Shah, Shahid Jamal Siddique, Mohammad Yousaf Depar, et al. Subtenon anaesthesia in anterior segment surgery. *Pak J Ophthalmol* 2006; 22(4); 186-9
11. Abdul Hmeed Khokhar, Riaz Baloch, Iftikhar Ahmad. Effectiveness of peribulbar (Extracone) anaesthesia in comparison with combined retrobulbar and facial nerve block for anterior ocular surgery. *Pak J Ophthalmol* 2007; 23(2): 69-72.
12. Sinha R, Subramaniam R, Chabbra A, et al. Comparison of topical lidocaine gel and fentanyl for perioperative analgesia in children undergoing cataract surgery. *Paediatric anaesthesia*. 2009(4); 371-5.
13. Michael A Page and Frederick W Fraunfelder. Safety efficacy and patient acceptability of lidocaine hydrochloride ophthalmic gel as a topical ocular anesthetic for use in ophthalmic procedures. *Clin Ophthalmol* 2009; 3: 601-9.
14. Mumtaz Husain, Mohammad Mateen Aamir,

Aqil ur Rehman Nadeem and Nazir Ahmad Aasi. Extracapsular cataract extraction, Role of topical anaesthesia. *The Professional Med J* 1998; 5(4):475-82.

Mohammad Mateen Amir,
Associate Professor,
AL-Khidmat Teaching Hospital Mansoorah
Lahore.

The Authors:

Muhammad Rizwan Ullah,
Assistant Professor.
Ophthalmology Department
Postgraduate Medical Institute
Lahore General Hospital
Lahore

Aqil-ur-Rehman Nadeem,
Associate Professor,
Ophthalmology Department,
Women Medical College,
Abbottabad.

Corresponding Author

Muhammad Rizwan Ullah,
Assistant Professor.
Ophthalmology Department
Postgraduate Medical Institute
Lahore General Hospital, Lahore
mrizwan68@yahoo.com
0321-4393269