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Original Research Article

Combined intraocular and oculofacial surgeries

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ABSTRACT

Background: Traditionally, a 'combined surgery' for ophthalmologists includes combined cataract extraction with other intraocular surgeries. However, literature is lacking on oculofacial procedures (eyelid, brow lift and facial surgery) combined with cataract extraction.

Materials and Methods: With this study, we aim to analyse the possibility and feasibility of simultaneous cataract and Oculoplastic procedures. Patients with operable cataracts and non-infective oculoplastic lesions, consenting to undergo simultaneous procedures were included in the study. We performed combined cataract and oculoplastic procedures in 122 patients, out of which 53 were males and 69 were females, 73 were ipsilateral and 49 contralateral eyes. The postoperative follow-up period was 1 month.

Results: We did not note any hemorrhage/ hematoma in any of our patients undergoing combined procedures. No post-operative ocular inflammation/ infection was noted after cataract extraction. We found that the combined procedure of ptosis under/ over correction with cataract extraction had no bearing on visual outcomes as compared to routine cataract outcomes. We noted no under or over-correction in patients undergoing ptosis correction.

Conclusion: Simultaneous extra-ocular and phacoemulsification is an option for patients reluctant for multistage procedures either by choice or medical recommendations. It is also an alternative for patients with poor medical compliance and works in favour of ergonomics and economy.

1. Introduction

The majority of patients who undergo cataract surgery have coexisting ophthalmologic disorders that can be tackled with conventional surgical techniques. Traditionally, a 'combined surgery' for the ophthalmologist included combined cataract extraction with other intraocular surgeries eg. Trabeculectomy,[1] glaucoma shunt procedures,[2] vitrectomy[3] and penetrating keratoplasty.[4,5] Few studies of combined cataract surgery with strabismus surgery are also present, which is an example of a combined intra-ocular and extra-ocular surgery.[6–8]

However, literature is lacking on other extraocular procedures (eyelid, brow lift and facial surgery). Since cataract is majorly a consequence of ageing, many involutional changes occur in and around the eye, like ptosis, dermatochalasis, brow ptosis, and lid laxity. Hence, combining cataract surgery and other oculofacial procedures simultaneously aims at visual, functional and aesthetic rehabilitation at a single sitting. It helps in reducing morbidity due to multiple surgeries and the institutional as well as patient financial burden.

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Barring infective conditions like hordeolum, blepharitis and acute and chronic sac infections most oculoplastic conditions are clean and non-infective and do not contribute any extra risk for intraocular complications. Oculofacial procedures like ptosis correction,[9,10] blepharoplasty,[11,12] excision of nevus,[13] cyst or benign masses[14] can be easily combined with cataract extraction. Hence, the lacuna regarding the possibility of safe, effective and economical combination of cataract extraction and oculofacial procedures needs to be studied.

With this article, we aim to study the possibility and feasibility of simultaneous cataract and Oculoplastic procedures. Primarily, we aim to evaluate the post-operative outcomes of combined cataract and oculoplasty surgeries.

2. Materials and Methods

A prospective, observational pilot study was conducted to analyse data from patients undergoing combined cataract and oculoplastic procedures. Patients with operable cataracts and non-infective oculoplastic lesions, consenting to undergo simultaneous procedures were included in the study. Institutional scientific and ethics committee clearance was obtained before enrolment of patients. All data of patients undergoing combined surgeries from May 2023 to December 2023 by oculoplastic surgeons was analysed.

2.1. Inclusion criteria

Presence of senile immature /mature cataract with eyelid abnormalities (ptosis, medial ectropion, lagophthalmos), non-infective lid masses. Contralateral or ipsilateral eye.

Patients undergoing phacoemulsification/manual small incision cataract surgery (SICS) along with simultaneous oculoplastic surgery.

2.2. Exclusion criteria

Entropion, chalazion, punctal pathologies, other local infective conditions, chronic dacryocystitis and patients not willing to have combined procedures.

2.3. Pre-operative protocol

1. Uncorrected visual acuity (UCVA)
2. Best corrected visual acuity (BCVA)
3. Slit lamp examination of anterior segment-to rule out infective conditions of eyes.
4. Fundus examination
5. Keratometry, biometry and IOL power calculation done.
6. Further examination was tailored to the concerned pathology eg. ptosis, eyelid mass excision, dermatochalasis, brow ptosis and others.

2.4. Operative protocol

Skin marking done as per oculoplasty procedure planned (e.g. lid crease and limbus marking for ptosis, brow marking for internal browpexy, skin flap marking for upper lid blepharoplasty, fat prolapse marking for lower lid blepharoplasty). Patient was prepared according to cataract surgery requirements. Local anesthesia with 2% Lignocaine mixed with 1:1,00,000 U Adrenaline and 1500U Hyaluronidase given as peribulbar block for ipsilateral eyes, Subtenon's block and lid block for contralateral eyes. We performed phacoemulsification/ SICS using superior section. Cataract surgery was performed first, followed by the oculoplasty procedure in the same operation theatre, on the same operating table. Oculoplasty procedure was undertaken provided the cataract surgery was uneventful. Eye was bandaged with antibiotic eye ointment.

2.5. Post-operative protocol

Eye bandage was removed the next day. UCVA was documented. Anterior segment findings noted with respect to lids, wound stability, anterior chamber depth, corneal examination, pupillary examination and posterior chamber lens position. In cases of ptosis correction and upper lid blepharotomy procedures, lid contour, palpebral fissure height, margin-to-reflex distance 1 (MRD1), levator palpebralis superioris (LPS) action was measured, Bell's phenomenon and lagophthalmos noted. Sutures if present, noted if intact. For mass excision and cyst excision procedures, wound apposition was noted, sutures if present, noted if intact. In nevus excision cases, lid margin was examined for notching or heaping of tissues from residual tumour. Brow position noted in browpexy cases. Medial and lateral canthal position noted in PMCT, lateral tarsal strip, lateral canthopexy procedures.

2.6. Follow up

All patients were followed up 1 week and 1 month after surgery in the outpatient department. UCVA and BCVA done in eyes undergoing cataract surgery. Oculoplasty findings noted as per the procedure performed.

3. Results

We performed combined cataract and oculoplastic procedures in 122 patients, out of which 53 were males (43% of all patients) and 69 were females (57% of all patients), 73 were ipsilateral (60% of all cases) and 49 contralateral eyes (40% of all cases). We noticed that females were more than males. The postoperative follow-up period was 1 week and 1 month.

We found that ptosis correction was the most commonly performed procedure combined with cataract extraction, which accounted for 32% of all cases. Successful outcomes

Table 1:

Cataract Surgery+Oculoplasty Procedure	Male	Female	Ipsilateral eye	Contralateral eye
Muller's muscle conjunctival resection (17)	6	11	12	5
Posterior white line advancement (22)	8	14	14	8
Nevus excision (18)	6	12	12	6
Mass excision (3)	2	1	2	1
Cyst excision (4)	3	1	1	3
PMCT-posterior medial canthal thermoplasty (6)	3	3	4	2
Upper lid Blepharotomy (8)	6	2	8	0
Upper lid Blepharoplasty (10)	2	8	5	5
Lower lid Blepharoplasty (4)	2	2	1	3
Lateral tarsal strip procedure (15)	5	10	7	8
Lateral canthopexy (11)	7	4	6	5
Internal browpexy (4)	3	1	1	3
Total	**53**	**69**	**73**	**49**

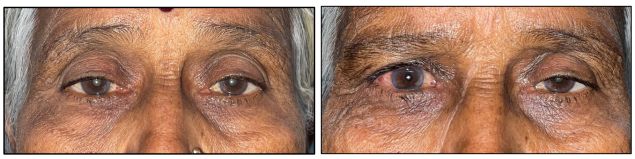

Figure 1: Preoperative and post-operative day 1: Right eye cataract extraction with posterior whiteline advancement

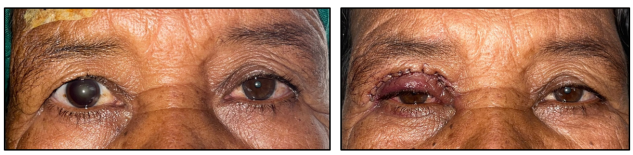

Figure 2: Preoperative and post-operative day 1: Right eye cataract extraction with upper lid blepharoplasty

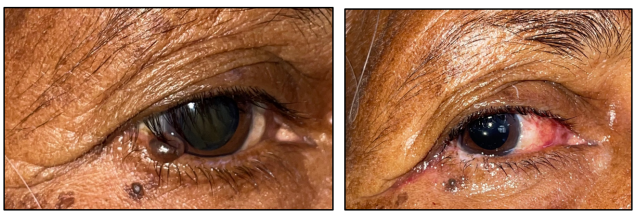

Figure 3: Preoperative and post-operative day 1: Right eye cataract extraction with nevus excision

were noted in all cases, not requiring immediate post-operative revision. The combined procedure of ptosis correction with cataract extraction had no bearing on visual outcomes as compared to routine cataract outcomes. We noted no under or over-correction in patients undergoing ptosis correction, and theoretically, if found can be dealt with as routine ptosis correction outcomes. Wound apposition and healing found to be adequate in all cases and no infection, granuloma noted.

We did not note any hemorrhage/ hematoma in any of our patients undergoing combined procedures. No post-operative ocular inflammation/ infection was noted after cataract extraction.

4. Discussion

While performing combined cataract extraction and oculofacial procedures, it is important to keep in mind not to take any infective cases, lest it gravely affect the postoperative cataract outcomes leading to endophthalmitis in rare cases.[15] Any suspicion of infective condition of eyelid should not be considered for combined surgery, and cataract surgery should be deferred till infective condition is resolved.

Cataract surgery should be performed first, so as to secure the wound and avoid challenges in performing cataract surgery if tissue edema develops after oculoplasty procedure. Since the intraocular wounds are self-sealing due to the pressure gradient inside and outside the eye, wound stability is maintained throughout the oculoplasty procedure. Nevertheless, care should be taken not to put undue pressure on the globe while instrumentation for oculoplasty procedures, to prevent anterior chamber collapse and globe deformation. Any suspected wound leaks should be secured with non-absorbable sutures.

In case of ptosis correction posterior approach,[16] conjunctival wound is away from the intraocular wounds, hence conjunctival flora is not disturbed during the procedure. Care must be taken to protect cornea from drying and touch, while instrumentation and handling of conjunctiva and lid tissues. Rest of the oculoplasty procedures did not show any intraocular infections, as the sites of surgery are far away from the intraocular wound, thus precluding any exposure of skin flora to the intraocular wounds. Sterility is not compromised in non-infective oculoplastic conditions, hence there is no need for combined cases to be done last on the operative list.

5. Conclusion

Simultaneous extra-ocular and cataract surgery is an option for patients reluctant for multistage procedures either by choice or medical recommendations. It is also an alternative for patients with poor medical compliance and works in favour of ergonomics and economy. Prevention of multiple hospital visits, reduction in carbon footprint and earlier rehabilitation of patients positively impact the quality of life of patients in the early postoperative period and hence lead to patient comfort and satisfaction. Combining cataract surgery and other oculofacial procedures simultaneously aims at visual and aesthetic rehabilitation at a single sitting, speeds healing and reduces financial burden. The results through this technique are comparable with multistage procedures without any untoward complications. Through this article, we would like to highlight the possibility of combined intraocular and extraocular procedures simultaneously, minimizing patient morbidity, anaesthetic exposure and surgical cost. As opposed to conventional thinking, ptosis correction can safely be combined with cataract extraction without the need to defer one surgery for the other.

This being a pilot study has its limitations and further studies at multiple locations can make this simultaneous procedure possible.

6. Author Contributions

1^{st} author has contributed to performing surgeries, collection of data, analysing of data, documentation of pre and postoperative data, obtaining patient consent, obtaining Institutional Scientific Committee and Institutional Ethics Committee approval, preparation of manuscript, proof reading of manuscript, review of literature, statistical analysis and finalisation of manuscript.

2^{nd} author has contributed to performing surgeries, collection of data, analysing of data, documentation of pre and postoperative data, proof reading of manuscript, finalisation of manuscript and correspondence with journal.

3^{rd} author have contributed to performing surgeries, collection of data, analysing of data, documentation of pre and postoperative data, proof reading of manuscript and finalisation of manuscript.

4^{th} author has contributed to performing surgeries, collection of data, analysing of data, documentation of pre and postoperative data, obtaining patient consent, obtaining Institutional Scientific Committee and Institutional Ethics Committee approval, proofreading of manuscript and review of literature.

5^{th} author has contributed to critical evaluation and editing of manuscript.

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None.

8. Conflict of Interest

None.

References

1. Murthy SK, Damji KF, Pan Y, Hodge WG. Trabeculectomy and phacotrabeculectomy, with mitomycin-C, show similar two-year target IOP outcomes. *Can J Ophthalmol*. 2006;41(1):51–9.
2. Chung AN, Aung T, Wang JC, Chew PT. Surgical outcomes of combined phacoemulsification and glaucoma drainage implant surgery for Asian patients with refractory glaucoma with cataract. *Am J Ophthalmol*. 2004;137(2):294–300.
3. Kokame GT, Tanji TT, Yanagihara RT, Shantha JG, Nirwan RS, Tanji TM, et al. Refractive Outcomes of Combined Cataract Surgery and Vitrectomy Compared to Cataract Surgery Alone. *Ophthalmologica*. 2023;246(1):39–47.
4. Javadi MA, Feizi S, Moein HR. Simultaneous penetrating keratoplasty and cataract surgery. *J Ophthalmic Vis Res*. 2013;8(1):39–46.
5. Cazabon S, Quah SA, Jones MNA, Batterbury M, Kaye SB. Sequential versus combined penetrating keratoplasty and cataract surgery. *Optom Vis Sci*. 2010;87(7):482–6.
6. Ticho BH, Ticho KE, Kaufman LM. Combined strabismus and lens surgery. *J AAPOS*. 2006;10(5):430–4.
7. Squirrell D, Edwards M, Burke J. Combined strabismus and phacoemulsification cataract surgery: A useful option in selected patients. *Eye (Lond)*. 2002;15(Pt 6):736–8.
8. Basmak H, Sahin A, Yildirim N. Combined cataract and strabismus surgery with adjustable sutures. *Ophthalmic Surg Lasers Imaging*. 2006;37(3):198–203.
9. Habroosh FA, Eatamadi H. Conjunctival Sparing Ptosis Correction by White-Line Advancement Technique. *J Ophthalmol*. 2020;2020:9021848.
10. Michels KS, Vagefi MR, Steele E, Zwick OM, Torres JJ, Seiff SR. Müller muscle-conjunctiva resection to correct ptosis in high-risk patients. *Ophthalmic Plast Reconstr Surg*. 2007;23(5):363–6.
11. Zinkernagel MS, Ebneter A, Ammann-Rauch D. Effect of Upper Eyelid Surgery on Corneal Topography. *Arch Ophthalmol*. 2007;125(12):1610–2.
12. Vola ME, Lisboa R, Diniz ER, Pereira NC, Kanecadan RT, Forseto ADS, et al. Influence of upper blepharoplasty on intraocular lens calculation. *Arq Bras Oftalmol*. 2021;84(1):11–6.
13. Nicholson CL, Daveluy S. Epidermal Nevus Syndromes. [Internet]. Treasure Island (FL): StatPearls Publishing; 2023.
14. Jordan DR. Common Eyelid Lumps and Bumps; 2016. (Accessed: 01 July 2024). Available from: https://drjordan.on.ca/common-eyelid-lumps-bumps/.
15. Verma L, Agarwal A, Dave VP, Honavar SG, Majji AB. All India Ophthalmological Society (AIOS) Task Force guidelines to prevent intraocular infections and cluster outbreaks after cataract surgery. *Indian J Ophthalmol*. 2022;70(2):362–8.
16. Patel V, Salam A, Malhotra R. Posterior approach white line advancement ptosis repair: the evolving posterior approach to ptosis surgery. *Br J Ophthalmol*. 2010;94(11):1513–8.

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