

COMPLICATIONS OF PERIBULBAR ANESTHESIA GIVEN BY RESIDENTS IN PATIENTS UNDERGOING CATARACT SURGERY

Medical Science

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ABSTRACT

Background- Although complications of peribulbar anesthesia given by residents in patients undergoing cataract surgery relatively rare which ranges from the trivial to devastating. **Aim of study-** To report various complications of peribulbar anaesthesia in cataract surgery. **Methods-** Consecutive patients who underwent cataract surgery under peribulbar anaesthesia given by residents between June 2017 to Oct 2019 were included in study. In all cases 6-8 ml of anesthetic solution (2% lignocaine and 0.5% bupivacaine in ratio of 2:1 with hyaluronidase 5 IU/ml) were injected in peripheral space of orbit. Any complication related to anaesthesia were noted. **Result--** 3892 eyes of 3769 patients (1986 males and 1783 females) were included in the study. Mean age of patients were 59 ± 8.8 years. Most common complications noted were chemosis (4.52%), ecchymosis (1.38%) and subconjunctival hemorrhage (1.02%). Retrobulbar hemorrhage occurred in 5 eyes in which surgery was deferred for 1 week. None of the patients had globe perforation, optic nerve injury or any systemic complications. **Conclusion-** Peribulbar anaesthesia is quite safe in hands of residents if done under supervision of consultant.

KEYWORDS

INTRODUCTION

Peribulbar anesthesia was discovered late in 1980s by Dr. David and Mandal. Various local anesthetic techniques have evolved since then including both akinetic (needle / cannula based) and non-akinetic (topical anesthesia). Now most eye operations can be performed under local anesthesia, which can be either topical, or orbital regional anesthesia. Cataract is most commonly performed ophthalmic surgery. Although now a days topical anesthesia is preferred for cataract still in majority of cases peribulbar block is given. Complications of local anaesthesia may range from the trivial to the devastating, which may threaten sight or even life.

METHODS

Consecutive patients who underwent cataract surgery under peribulbar anaesthesia given by residents between June 2017 to Oct 2019, at RIO, Rajendra Institute of Medical Sciences were included in study. In all cases 6-8ml of anesthetic solution injected in peripheral space of orbit.

Components of anesthetic solution-

Lignocaine (2%), bupivacaine (0.5%), hyaluronidase which increases effectiveness of block by facilitating spread of lignocaine or bupivacaine through tissues.^[1,2,3] Adrenaline (1: 100,000) may be used.

Preparation of solution-

Add 1 ampoule of hyaluronidase (containing 1500 IU) to 20 ml bottle of lignocaine 2%. To use adrenaline, add 0.1ml from vial of 1:1000 adrenaline to 10ml of anesthetic solution (to get 1: 100,000)

Administration technique-

1. Inferotemporal injection- In peribulbar block usually 2 injections are given.

A 25G 2.5cm long needle inserted transcutaneously at junction of medial two-third and lateral one-third of lower lid adjacent and parallel to orbital floor for 2.5cm. Gentle aspiration of syringe is performed to rule out possible entry of needle into blood vessel. Then 5ml anesthetic solution is injected

2. Nasal injection-

To supplement peribulbar injection, particularly when akinesia is not adequate. Needle is inserted just below supraorbital notch to depth of 15 mm and 3 to 5 ml of local anesthetic agent is injected.

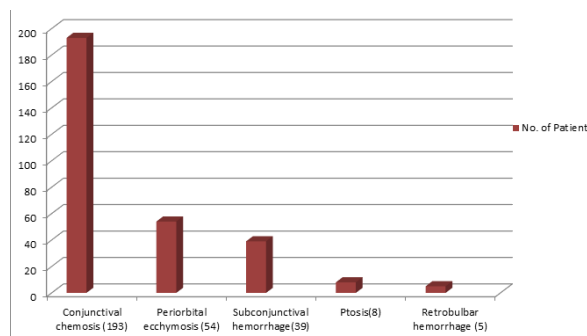
Any complications related to peribulbar anesthesia were noted.

RESULTS

This study included 3892 eyes of 3769 patients (1986 males and 1783 females) who underwent cataract surgery under peribulbar anaesthesia given by residents between June 2017 to Oct 2019 at RIO, Rajendra Institute of Medical Sciences, Ranchi for a study period from June

2017 to Oct 2019. Findings were

- Mean age of patients were (59 ± 8.8 years).
- Most common complications of peribulbar anesthesia (graph.1) were conjunctival chemosis in 193 pt (4.9%), periorbital ecchymosis in 54 pts (1.38%) & subconjunctival hemorrhage in 39 pt (1.02%).
- Ptosis in eight (0.2%) patients. Ptosis recovered by itself without any intervention in 2 weeks. Muscle paresis in three patients.
- Retro bulbar hemorrhage was noted in 5 eyes in which surgery was deferred for 1 week.
- None of the patient had globe perforation, optic nerve injury or any systemic complications.



Graph 1- Showing complications of peribulbar block

DISCUSSION

Orbital regional anesthesia (peribulbar) is preferred by many ophthalmologists for cataract surgery. They can provide orbital analgesia and/or akinesia with a lower incidence of systemic side effects, than general anesthesia. These factors are especially important for frail and elderly patients, who undergo cataract surgery.

In a study by Davis DB et al, there was one globe perforation (0.006%), two expulsive hemorrhages (0.013%), one grand mal seizure (0.006%).^[4] But in our study no such complications were noted.

Retrobulbar haemorrhage is a serious complication which may occur in 0.1–1.7 % of patients^[5,6,7], although its incidence is very low in present study.

CONCLUSION

Peribulbar block is relatively safe procedure when given by residents under supervision of consultants. It is preferred for its low rate of complications despite its disadvantage of being required more than 1 injection, larger volume of local anesthetic solution, being slower and less efficient and it puts more pressure on eyes.

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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