

Guest Editorial

Tushar Agarwal



Topical Anaesthesia For Cataract Surgery: Patient's And Surgeon's Perspective

The use of topical Cocaine to anaesthetize the cornea was first demonstrated by Carl Koller in 1884. Knapp used a 5% Cocaine formulation to perform cataract surgery under topical anaesthesia in the same year. The technique however failed to gain widespread acceptance at the time owing to the introduction and popularization of other methods such as retrobulbar and peribulbar anaesthesia.¹ These techniques were; however, fraught with complications such as globe rupture, optic nerve damage and retrobulbar haemorrhage. Over the subsequent decades, advent of microincisional cataract surgery and advancements in intraocular lens (IOL) materials reduced the need for akinesia during surgery. The use of topical anaesthesia for phacoemulsification was reintroduced as an alternative to local anaesthesia by Fichman in 1992.² Rapid onset of anaesthesia, early restoration of vision, avoidance of potential complications associated with retrobulbar or peribulbar anaesthesia and absence of ocular akinesia postoperatively are some of the notable advantages observed with topical anaesthesia. Numerous studies have reported excellent outcomes with use of topical anaesthesia for phacoemulsification, reaffirming its role as a safe and efficacious method of anaesthesia in these patients. Some of the commonly employed agents for providing topical anaesthesia during phacoemulsification include lidocaine (4%), proparacaine (0.5%) and ropivacaine (1%).

In this issue, the article by Rewri et al reports the high level of acceptance of topical phacoemulsification among surgeons and patients alike. The study highlights the role played by the patient's socio-demographic and psychological factors on their satisfaction and cooperation during the surgery.³

Success of topical phacoemulsification is determined by appropriate patient selection, counselling and preparation. From a surgeon's perspective, the use of topical anaesthesia can save a considerable amount of time, which may be particularly advantageous in a busy operating room (OR) schedule. Moreover, preservation of ocular mobility during surgery may allow the optimization of red reflex and facilitate access of wound site while performing the steps.

Careful patient selection is the key to optimising outcomes and preventing inadvertent complications with the use of topical anaesthesia. Patients who appear uncooperative, are excessively anxious, exhibit suboptimal cognitive faculties or belong to the paediatric age group may not be well suited for undergoing surgery under topical anaesthesia. Furthermore, since the effect of topical anaesthesia is limited to the ocular surface, it may not provide sufficient anaesthesia in cases where intraoperative iris or ciliary body manipulation is required. Patients undergoing topical phacoemulsification in the second eye have been found to experience increased pain and display worse cooperation as compared to the first eye. The surgeon should, therefore, consider supplementing topical anaesthesia with sedation or analgesia in the second eye surgery while operating patients who showed poor cooperation during the first eye surgery.⁴ Factors such as increased preoperative intraocular pressure, greater anterior chamber depth and high axial length have been associated with greater intraoperative pain. Alternative techniques or supplementation of topical anaesthesia may be considered in these patients.⁵

Appropriate patient counselling is important as the patient needs to be explained the importance of keeping the eye still, which is crucial during the steps of capsulorhexis and IOL implantation. The use of topical anaesthesia has also been reported to be a safe technique for trainee residents who had no prior experience with retrobulbar or peribulbar anaesthesia.⁶ While

factors such as a longer operative time and intraoperative fluctuation of anterior chamber depth may cause increased patient discomfort, the analgesic effects and comfort levels experienced by the patients do not seem to be significantly affected by the surgeon's experience.⁷

Topical phacoemulsification when performed in a suitable patient, can substantially improve the patient comfort, as it avoids the need for any needle based procedures. Fichman et al reported that the vital parameters of patients undergoing topical phacoemulsification were essentially stable throughout the procedure, indicating that they remained comfortable during surgery. This was also reaffirmed by studies which evaluated the patient pain scores during each step of surgery.⁸ Most studies have reported the patient perceived pain to be low and tolerable.⁹ On the other hand, patients receiving peribulbar anaesthesia have reported higher pain both during the anaesthetic solution infiltration as well as during the surgery as compared to those operated under topical anaesthesia.¹⁰

Today the use of topical anaesthesia has become the preferred alternative for performing phacoemulsification in routine cases. While the technique has numerous advantages over the peribulbar and retrobulbar infiltration, appropriate patient selection is the key to ensuring successful outcomes with its use. The surgeon should not hesitate to administer supplementary analgesia or use infiltrative anaesthetic techniques if the patient is deemed unsuitable for undergoing surgery under topical anaesthesia.

Finally, the patient's comfort and safety should be the main deciding factor while determining the type of anesthesia to be deployed by the surgeon,

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Tushar Agarwal, (MD)

Professor of Ophthalmology

Dr Rajendra Prasad Centre for Ophthalmic Sciences

All India Institute of Medical Sciences, New Delhi, India



DOI: <http://dx.doi.org/10.7869/djo.614>