0.5% Proparacain hydrochloride for clear corneal phacoemulsification in patients with co-morbid conditions

Dear Sir,

Topical anesthesia is the safe and effective alternative to injectable anesthesia for phacoemulsification.[1,2] Frequent instillations of topical anesthetic drops pre-operatively can lead to corneal clouding during the surgery. Intracameral preservative free lignocaine has been supplemented to topical anesthesia to minimize the intra-operative discomfort.

This study was carried out to evaluate the effectiveness 0.5% proparacain in phacoemulsification and compare it to intracameral 0.5% lignocaine as a supplement to topical proparacain drops.

Patients having cataract associated with co-morbidities like old healed uveities post-vitrectomized, subluxated cataract,non dialating pupil were included in the study. All patients had routine ophthalmic evaluation. Patients were divided into 2 groups based on anesthetic agents they were to receive before cataract surgery. Group 1 patients received 0.5% proparacain every 5 min for 15 min before the start of surgery placed in the lower fornix. Group 2 patients received supplement of intracameral 0.5% preservative free lignocaine. Preoperatively, the pupils were dilated with phenylephrine 5% tropicamide 0.8% eye drops. No non-steroidal anti-inflammatory and sedative drugs were used pre-operatively.

A single surgeon performed all surgeries. Universal eye speculum was used in all cases. Patients were instructed to fixate on the microscope light during the surgery. A standard phacoemulsification was performed in all patients by chop technique.

After the completion of the surgery a standard 10-point visual analog scale was used to assess intra-operative and post-operative pain,[3] surgical time, surgeon's subjective impression on corneal haze, and discomfort during the surgery (grade 0 = clear, 1 = mild hazy, 2 = moderate, 3 = severe), complications and supplemental anesthesia were assessed. Patients were also asked whether they would be going for similar type of anesthesia for other eye cataract surgery.

Anesthetist noted vital parameters such as blood pressure, pulse rate, oxygen saturation, and supplemental anesthesia during the surgery.

Comparison of parameters was carried out by Mann-Whitney test.

No statistically significant difference was seen in the intra-operative ($P = 0.389$) and post-operative ($P = 0.456$) pain score in 2 groups. Zero score i.e. no pain was seen in 30.1% patients in Group 1 and 40.5% patients in Group 2. The average surgical time ($P = 0.883$) and surgeon discomfort ($P = 0.279$) were also not significant in 2 groups. Three patients in Gr1 and 1 patients in Gr2 required supplemental anesthesia. Equal number of patients in both the groups preferred same anesthetic technique for other eye cataract surgery (Group 1 78.2% and Group 2 79%). No patients in either group had changes in vital parameters and required intravenous sedation.

Our study showed 0.5% proparacain application and intracameral supplementation of lignocaine provided satisfactory patient comfort to conduct safe phacoemulsification in all grades of cataracts with co morbid conditions associated with it. There was no significant difference in intra-operative, post-operative pain scores, and surgeon's discomfort between 2 groups.

No patient required supplemental anesthesia or intravenous sedation during the procedure. There were no intra-operative complications, no corneal haze, which could compromise the visual outcome.

However, surgeons' expertise and experience are important factors in performing phacoemulsification in patients with minimal anesthesia.

The ease of application, lack of toxicity and sufficient effect to complete the surgery make proparacain an efficient alternative in patients with cataract with co-morbid conditions by clear corneal phacoemulsification. However, it is prudent to individualize the anesthetic technique according to the patient and surgeon's need.

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