Effect of infratrochlear nerve block on discharge readiness in patients undergoing strabismus surgery

Dear Editor,

Strabismus is an improper ocular alignment that causes a disparity in both distant and near vision.[1] The most important anesthetic concern is intraoperative oculocardiac reflex (OCR) and postoperative pain.[2,3] No study has evaluated the role of infratrochlear nerve block (ITB) for discharge readiness in a strabismus patient.

This study was registered with the Clinical Trials Registry (CTRI/2020/02/023368). The inclusion criteria were patients aged >1 year of both sexes and having an ASA physical status of I and II. The patients were excluded if any other ocular pathology other than strabismus, revision surgery, severe neurological, cardiac and respiratory problems, intake of antiepileptic drugs, or any allergy to study drugs. After detailed pre-anesthetic evaluation, a written informed consent was taken from patient or parents as per age criteria. A standard general anesthesia (GA) with intravenous (IV) propofol or sevoflurane, fentanyl, vecuronium, and dexamethasone was administered. Out of 18 patients, 6 received ITB and 12 received no block. ITB was performed by injecting 1 ml of 2% lidocaine with a 1:100000 dilution of epinephrine via a 30-G needle (13-mm needle) at the medial orbital rim just above the lacrimal caruncle. Sudden decrease in heart rate (HR) of more than 15% from baseline was considered as OCR. Mild OCR: HR decrease of more than 30% from baseline, then surgery was stopped for recovery of bradycardia. Severe OCR: HR <40 beats.min^{-1}, then administer IV 0.01 mg.kg^{-1} atropine. Treatment of OCR included the surgeon's cessation of surgery, preventing hypoxia or hypercarbia, maintaining depth of anesthesia, and administering IV atropine 0.01 mg.kg^{-1} for bradycardia. The standard analgesic was paracetamol 15 mg/kg and for rescue analgesia 1 μg.kg^{-1} fentanyl was administered. The time spent in the post-anesthesia care unit (PACU) was calculated as time to achieve physiological discharge criteria scoring system of minimum score of 12 (with no 0 score for any of the component).[3] IV 0.1 mg.kg^{-1} ondansetron was used as rescue antiemetic. All the statistical tests were two-sided, performed at a significance level of $\alpha = 0.05$ using IBM's Statistical Package for the Social Sciences (SPSS) version 22.0.

The time to achieve physiological criteria-based discharge scoring system was earlier in group ITB ($P = 0.000$), as shown in Table 1. The incidence of intraoperative OCR in group ITB was 16.7% and 66.7% in group no-block ($P = 0.046$). More patients in group no-block required rescue analgesia compared to none in group ITB. The objective pain score (OPS) verbal numeric rating score (VNRS) at 15 min and 30 min were lower in group ITB than in group no-block. No serious adverse effects were reported in any patient.

ITB given as preventive analgesia blocked the afferent sensations before the nociceptive stimulation of the pain receptors of the medial rectus muscle via ophthalmic branch of the trigeminal nerve.[4] ITB helps in blocking the afferent sensations originating from the muscles during its traction and cutting while performing resection or recession.[2] In the present study, patients receiving ITB had lower OCR, lower pain score, and a shortened length of stay in the PACU.

Table 1: Comparison of group infratrochlear nerve block (ITB) versus group no-block

	Group ITB (*n*=6)	Group No-Block (*n*=12)	*P*
Age (years)	8.00±4.30	15.40±12.00	0.167
Incidence of OCR (%)	16.70%	66.70%	0.046*
Total duration in PACU (min)	15.83±2.04	38.75±10.89	0.000*
Discharge score in PACU at 15 min	13.00 [12.00-13.00 (12-14)]	11.50 [11.00-12.00 (10-12)]	0.003*
Discharge score in PACU at 30 min	14.00 [14.00-14.00 (14-14)]	13.50 [12.00-14.00 (11-14)]	0.063
Rescue analgesia in PACU, *n* (%)	0.00%	50.00%	0.034*
Time to first rescue analgesia (min)	8.16±3.54 [0.65-16.98 (5-12)]	4.54±1.86 [3.29-5.80 (2-8)]	0.071
Pain assessment			
OPS	3.50 [2.25-3.00 (3-4)]	1.00 [0.75-1.00 (1-1)]	0.102
NRS	4.00 [3.25-4.00 (3-4)]	3.00 [3.00-4.00 (2-4)]	0.236
PONV, *n* (%)			
15 min	1.00 (16.66%)	3.00 (25.00%)	0.765
30 min	0.00 (0.00%)	1.00 (8.33%)	1.000

The data is represented as mean±standard deviation [95% confidence interval (range)] or median [interquartile range (range)], number (%). OCR: Oculocardiac reflex, PACU: Post-anesthesia care unit, OPS: Objective pain score, NRS: Numerical rate scale, PONV: Postoperative nausea and vomiting. Asterix marks (*) significant P

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Conflicts of interest
There are no conflicts of interest.

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References

1. Robaei D, Rose KA, Kifley A, Cosstick M, Ip JM, Mitchell P. Factors associated with childhood strabismus: Findings from a Population-based study. Ophthalmology 2006;113:1146-53.
2. Kim SH, Shin HJ. Effects of an infratrochlear nerve block on reducing the Oculocardiac reflex during strabismus surgery: A randomized controlled trial. Graefes Arch Clin Exp Ophthalmol 2018;256:1777-82.
3. Armstrong J, Forrest H, Crawford MW. A prospective observational study comparing a physiological scoring system with time-based discharge criteria in paediatric ambulatory surgical patients. Can J Anaesth 2015;62:1082-8.
4. Stasiowski MJ, Pluta A, LyssekBoroń A, Kawka M, Krawczyk L, Niewiadomska E, *et al*. Preventive analgesia, haemodynamics stability, and pain in vitreoretinal surgery. Medicina (Kaunas, Lithuania) 2021;57:262-78.

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