Clinical Evaluation Of Glossopharyngeal Nerve Block For Preemptive Analgesia After Tonsillectomy

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Citation

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Abstract

In the present study evaluation of the efficacy of glossopharyngeal nerve block (GNB) was done for the control of post-tonsillectomy pain in 50 patients equally divided into two groups (n=25 each), group B bupivacaine group received bilateral GNB with 0.25% bupivacaine 5ml and group C control group received no intervention . To evaluate the effects of GNB, we assessed throat pain (0-10 cm visual analog scale), in the immediate postoperative period, pain scores at rest and when swallowing.

INTRODUCTION

Postoperative pain is the principal cause of morbidity after tonsillectomy. This pain can affect the patient's nutrition, ability to return to work or school, discharge from the hospital, and overall satisfaction with the procedure. Tonsillectomy produces severe pain on the first postoperative day[1] . Several techniques have been described for the alleviation of this pain, including the use of opioid, steroids and non steroidal anti inflammatory drugs [1], as well as local anesthetic sprays and infiltration with local anesthetics around the tonsillar bed [1]. There is some controversy regarding the efficacy of glossopharyngeal nerve block (GNB) for the control of immediate posttonsillectomy pain.

METHODS

After obtaining written informed consent from each patient, 50 ASA 1–2 physical status adult patients scheduled for tonsillectomy under general anesthesia were recruited into this study (Table 1). Exclusion criteria included diabetes, cardiac conduction anomalies, bleeding disorders or coagulation disorders, liver or kidney disease, hypersensitivity to local anesthetics, chronic pain, regular analgesic use within1 wk of surgery, peritonsillar abscess or swallowing disorder.

Figure 1

Table 1. Demographic Data

	Group C	Group B
Age (yr)	38 ± 05	30 ±02
Gender (M/F)	12 /13	10/15
Weight (kg)	52 ± 10	48 ± 08
Data are expressed as Mean _ SD. There were no statistically significant differences among groups.		
Group C: patients received no glossopharyngeal nerve block,		
Group B: patients received glossopharyngeal nerve block with bupivacaine		

During the preoperative visit, patients were instructed how to express pain on a 0-10 cm visual analog scale (VAS) o=no pain ,10=worst possible pain. All patients were premedicated with inj glycopyrrolate 4µg/kg and Inj Midazolam 0.25 mg/kg intravenously before shifting for OT and Ketamine gargles 40 mg in 40ml NS kept for 30 seconds in the throat 5 minutes before induction of anaesthesia and were non-invasively monitored during surgery. Induction of general anesthesia done with Inj Propofol 2 mg /kg with 2 min prior i.v. Inj xylocard 2% 1.5 mg/kg to abolish the pain on propofol inj . followed by Inj succinyl choline 1.5 mg/kg to facilitate cuffed nasal Endotracheal Intubation. Maintenance was done with O_2 33% with 66% N_2O with vecuronium as non-depolarising muscle relaxant and intermittent traces 2-3% of sevoflurane .

After induction of G/A, glossopharyngeal nerve block via extraoral (peristyloid) approach was given with 24G 1½ inch hypodermic needle. To perform the peristyloid approach to the glossopharyngeal block the patient was placed supine and a line was drawn between the angle of the mandible and the mastoid process. After proper aseptic and

antiseptic precaution, Using deep pressure, the styloid process palpated just posterior to the angle of the jaw along this line, and a short, small-gauge needle was seated against the styloid process. The needle was then withdrawn slightly and directed posteriorly off the styloid process. As soon as bony contact was lost, 5 mL of inj. Bupivacaine 0.25% solution injected after negative aspiration for blood and air, and same procedure repeated on the other side.

All patients were monitored for intra-operative NIBP, temperature, pulse, respiratory rate, ECG and SPO_2. After surgery, pain at rest and swallowing was assessed using the VAS (0: no pain, 10: unbearable) in the recovery room every 2 hourly. If pain scores were more than 3 at rest, 75 mg of 1ml diclofenac sodium (inj Dynapar AQ) was administered IV.

Any problems related to GNB, such as upper airway obstruction and foreign body sensation in the throat were recorded. Doses of parenteral analgesics administered until 8 h and 12 h after surgery were recorded, and VAS pain assessments were done every 2 hrly till 12hrs after surgery.

RESULTS

VAS pain scores at rest in Group C were significantly higher throughout the 12 h study period.. There were no significant differences in postoperative nausea and vomiting, difficulty in swallowing, foreign body sensation in the posterior pharynx, dyspnea, nasal obstruction, or dry mouth among groups.

Figure 2

Table 2. VAS Scores (mm) Measured at Rest and Swallowing every 2 hrly till

12 h After Surgery		
VAS scores at rest	Gr. C	Gr.B
Postoperative 2h	3	0
Postoperative 4 h	6	0
Postoperative 6 h	9	0
Postoperative 8 h	10	2
Postoperative 10 h	10	2
Postoperative 12 h	10	3
VAS scores at swallowing		
Postoperative 2h	4	0
Postoperative 4 h	6	0
Postoperative 6 h	10	0
Postoperative 8 h	10	3
Postoperative 10 h	10	3
Postoperative 12 h	10	3

Time-by-glossopharyngeal nerve block (GNB) treatment interaction effect compared with Group C.

Group C: patients received no GNB, Group B: patients received GNB with bupivacaine.
GNB glossopharyngeal nerve block

DISCUSSION

To evaluate GNB's effectiveness for postoperative pain control, GNB itself should be performed successfully. We believed that the more successful GNBs resulted in less posttonsillectomy pain, because the glossopharyngeal nerve supplies sensory fibers to the tonsil and peritonsillar area. But whether the glossopharyngeal nerve was completely blocked, partially blocked, or not blocked, in all previous studies was not fully investigated.

References

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