

ANALGESIC EFFICACY OF BILATERAL SUPERFICIAL CERVICAL PLEXUS BLOCK ADMINISTERED BEFORE THYROID SURGERY UNDER GENERAL ANAESTHESIA – A CASE SERIES

Anaesthesiology

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ABSTRACT

Background: Thyroid surgery is moderately painful, but is increasingly being considered as a day- care procedure also Thyroid surgery is associated with increased incidence of Post operative Nausea and Vomiting. Bilateral superficial cervical plexus block (BSCPB) provides an adjuvant technique in view of adequate post operative pain relief and increase the time for first requirement of rescue analgesia. **Place And Duration Of Study:** Department of Anaesthesia , Government Nagapattinam Medical College and Hospital, Nagapattinam- 611001 (August 2021 to June 2022). **Methods:** 35 patients with euthyroid status undergoing total thyroidectomy were given Bilateral superficial cervical plexus block with 10 ml of 0.25% Bupivacaine 5ml each side after induction of General Anaesthesia. Primary outcome was time of requirement of first rescue analgesic in the postoperative period. Secondary outcomes were visual analogue scale (VAS) scores at 0, 4, and 8 hrs and incidence of postoperative nausea and vomiting (PONV). **Results:** Bilateral Superficial Cervical plexus Block given after induction General anaesthesia and Before skin incision effectively reduced the post operative pain in patients undergoing total thyroidectomy.

KEYWORDS

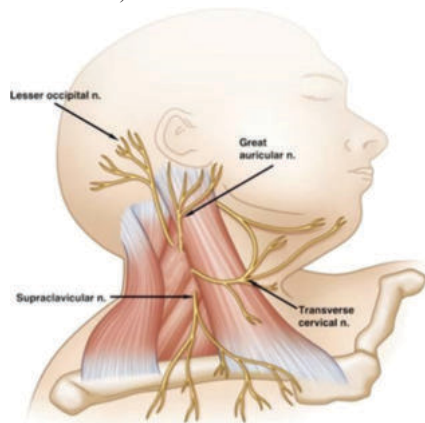
Superficial cervical plexus, Bupivacaine, VAS Score

INTRODUCTION

Thyroid surgery is now becoming more of day care procedure, thus increasing the need for early post operative pain relief, recovery and early ambulation. It has been reported that up to 90% of patients require opioids during the first postoperative day.

The concept of pre-emptive analgesia is hypothesized to pre-incision administration of local anesthetics to prevent central sensitization and therefore improve postoperative pain management.

Bilateral superficial cervical plexus block (BSCPB) has been utilized for postoperative pain management of neck surgeries because of its ability to block the emerging branches of the superficial cervical plexus (lesser occipital, greater auricular, transverse cervical, and supraclavicular nerves).

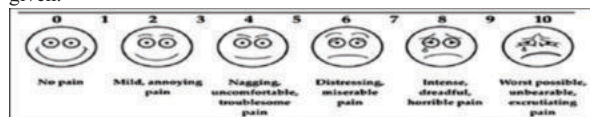


BSCPB is a procedure with a low serious complication rate. The risks of phrenic nerve palsy and total spinal anesthesia from injection into a Dura are restricted to blockade of the deep cervical plexus only. Thus in our case series we assessed the analgesic efficacy of BSCPB in post operative analgesia in patients undergoing Total Thyroidectomy under general anesthesia

METHODS

After obtaining Informed consent 35 patients in the age group of 30 to 50 yrs with euthyroid status (ASA PS I & II) undergoing total thyroidectomy were given I.v Premedication Inj. Glycopyrolate 0.2mg i.v, Inj Midazolam 1mg i.v and Inj Fentanyl 2mcg/kg I.v before

induction and preoxygenated. All patients were induced with Inj Propofol 2mg/kg after ensuring adequate mask ventilation Inj Atracurium 0.5mg/kg given and intubated with appropriate sized cuffed flexometallic tube. Anaesthesia maintained with oxygen, nitrous oxide and sevoflurane adjusted to a total MAC of 1. Bilateral superficial cervical plexus block given with 0.25% Bupivacaine 5ml on each side using 3 point technique. Inj Dexamethasone 8mg i.v given.



Visual Analog Score

At skin closure volatile anaesthetics stopped. Inj ondansetron 4mg I.v given 30 mins before extubation. Patient extubated after adequate reversal. Post operative Pain assessed using Visual analog scale at extubation, 4 hrs and 8 hrs after extubation, Time to first rescue analgesic and Post operative Nausea and Vomiting if any noted and treated accordingly.

RESULTS

All 35 patients included had euthyroid status and belongs to ASA PS I & II and did not differ much in respect to weight.

The minimum time to first rescue analgesic was 3hrs and the maximum time was around 7 hrs Post extubation. Mean time to first rescue analgesia was 5 hrs 20 mins.

Mean VAS Score at extubation was 1 and at 4 hrs 3 and at 8 hrs Mean VAS Score was 6.

Nausea reported in 4 patients. 1 of the patients had vomiting.

DISCUSSION:

In our case series we observed a significant reduction in post operative pain in patients who undergone Total thyroidectomy under general anaesthesia after pre-emptive (pre incision) Bilateral superficial cervical plexus block with 0.25% Bupivacaine 5ml each side.

The above result was concluded from the findings such as decrease in VAS Score at extubation and at 4 hrs post extubation and increased time to rescue analgesia post operatively. 1 Of the patient had vomiting, 4 patients complained of nausea.

G. Andrieu et al⁽¹⁾ demonstrated that BSCPB, performed immediately

after the induction of general anaesthesia in patients undergoing thyroid surgery using a three -point technique with ropivacaine 0.487%, with or without clonidine, significantly reduced postoperative analgesic requirement.

Dieudonne and colleagues⁽²⁾ pointed out the value of the BSCPb after thyroidectomy. In their study, half of the patients in whom a BSCPb was performed did not require opiate analgesics during the first two postoperative hours and 34% did not require opiate analgesics during the first 24 h after surgery. Another study reported a reduction in intra- and postoperative analgesic requirement with bilateral superficial and deep cervical plexus block performed with 0.5% plain ropivacaine with or without clonidine. The value of BSCPb in thyroid surgery is, however, debated.

Herbland and colleagues⁽³⁾ did not find an analgesic effect of BSCPb with 0.75% ropivacaine administered before or after surgery. However, Herbland and colleagues used a two-point injection for performing BSCPb, whereas we used a three-point technique. The two-injection technique blocks the main emerging branches of the superficial cervical plexus, whereas in the three-injection technique additional infiltration of the transverse cervical branches is achieved. Additional analgesia of this area may explain, at least in part, the difference observed.

Superficial cervical plexus block is probably sufficient for thyroid surgery. The serious complications that may be associated with deep cervical block, particularly phrenic nerve palsy, make it inappropriate to perform this block bilaterally. We observed no significant side-effects from superficial cervical plexus blockade. In particular, BSCPb was not associated with an increased incidence of recurrent nerve paralysis by diffusion of the local anesthetic. Compared with bilateral deep cervical plexus block, BSCPb has the advantage of being devoid of serious complications as long as injection of local anesthetic remains subcutaneous.

CONCLUSION

BSCPb is an effective technique to reduce analgesic requirements after thyroid surgery.

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