



CERVICAL EPIDURAL BLOCK AS AN ALTERNATIVE TO GENERAL ANAESTHESIA IN A PATIENT WITH ANTICIPATED DIFFICULT AIRWAY FOR TOTAL THYROIDECTOMY: A CASE REPORT

Anaesthesiology

Dr Vinayak Panchgar	Professor and head, Department of Anaesthesiology, Gadag Institute of Medical Sciences, Gadag.
Dr Priya K	Assistant Professor, Department of Anaesthesiology, Gadag Institute of Medical Sciences, Gadag.
Dr Swathi S*	Resident, Department of Anaesthesiology, Gadag Institute of Medical Sciences, Gadag. *Corresponding Author

ABSTRACT

Management of difficult airway continues to be a challenge for Anaesthesiologists. In spite of the availability of several authoritative guidelines and protocols on airway management, the management of each patient is unique and often depends on the skills and experience of the anaesthesia care provider as well as the availability of appropriate equipment. Here we report a case of 30 year old female, a known case of hyperthyroidism with history of multinodular goitre since 3 years with anticipated difficult airway and slightly deranged thyroid profile, clinically being asymptomatic posted for total thyroidectomy. Cervical epidural block performed successfully and the complications related to general anaesthesia were avoided.

KEYWORDS

INTRODUCTION

Thyroid surgeries are conventionally performed under general anaesthesia (GA). With the rising concern for GA related implications on cardiopulmonary, metabolic and immune status of the patient, a preference for regional anaesthesia has increased worldwide. Epidural anaesthesia is a ubiquitous technique in regional anaesthesia. While earlier trials were mainly focused on lumbar and thoracic epidurals, Cervical approach has been upcoming technique since past few years. Cervical epidural block results in anaesthesia of cervical plexus, brachial plexus and superior thoracic dermatomes. Additional advantages are low cost, reduced intraoperative blood loss, stable cardiovascular status, reduced stress response and early ambulation of the patient¹. Here we report a case of 30 year old female, a known case of hyperthyroidism with history of multinodular goitre since 3 years with anticipated difficult airway and slightly deranged thyroid profile, clinically being asymptomatic posted for total thyroidectomy done under Cervical epidural block.

CASE REPORT

A case of 30 year old female, of height 155cm, weighing 62 kilograms, with huge multinodular goitre scheduled to undergo total thyroidectomy presented to a preanaesthetic clinic. She was a known case of hyperthyroidism with the history of neck swelling since 2 years which was gradually increasing in size. She was being treated with Tab. Carbimazole 10mg TID and Tab. Propranolol 20mg BD. She had no any other significant history of pressure symptoms, and anaesthetic exposure in the past. On examination, a large anterior neck mass measured 10cm x 6cm which was firm, nodular, non-mobile and was able to appreciate the lower border of the swelling. Vital parameters and Cardiopulmonary examination were normal. Airway examination revealed adequate mouth opening with Mallampati class 3 and normal neck mobility. Indirect laryngoscopy showed normal vocal cords movement. Investigations revealed slightly deranged thyroid profile with T3-1.02ng/dl, T4-8.87mcg/dl, TSH-<0.05mIU/L and all other laboratory reports including ECG and Chest X ray showed no significant changes. Patient was clinically asymptomatic. Patient was classified under ASA class II and approved for the proposed surgery under Cervical epidural block in view of deranged thyroid profile and anticipated difficult airway. General anaesthesia with difficult airway cart was kept as a backup in case of failed block. The informed written consent was taken from the patient after explaining the risks and benefits of regional anaesthesia over general anaesthesia. On arrival to the preoperative room, intravenous access secured with a wide bore 18G cannula. Patient was well counselled regarding the procedure. Patient was then shifted to operation theatre, connected to basic monitors and basal parameters noted. Patient was put in a sitting position for cervical epidural catheterization. Under all aseptic precautions, parts painted and draped. The cervical epidural space was identified with an 18gauge Tuohy epidural needle, at C7-T1 intervertebral space using loss of resistance technique via midline approach. A catheter was then introduced 4cm into the epidural space.

After negative aspiration, the catheter was fixed and patient was laid supine. The test dose of 2% Lignocaine with Adrenaline of 3ml was injected via epidural catheter, vitals were monitored for 5 minutes. After confirming no deteriorations, 8ml of 2% Lignocaine was administered via epidural catheter with onset of action of 10-15 minutes^{1,2}. After obtaining bilateral sensory blockade assessed by pinprick sensation from C2 to T1 dermatome², surgery commenced. The patient was kept in a state of conscious sedation using Inj. Dexmedetomidine infusion which was administered as 1mcg/kg loading dose over 10 minutes followed by 0.5mcg/kg/hr³. Vital parameters were monitored throughout the surgery at regular 5 minutes interval and vocal cord functions by verbal contact with the patient. Epidural top ups given with 0.25% Bupivacaine 5ml depending upon the patient's discomfort. Surgery took 2 hours 20 minutes. Patient was shifted to recovery room, monitored for 2 hours and then shifted to surgical ICU. Postoperative analgesia maintained with top ups of 5ml 0.2% Ropivacaine for next 48 hours. Catheter was removed after 48 hours. Patient tolerated the procedure well and no known complications occurred during the procedure².

DISCUSSION

Providing safe anaesthesia for thyroid surgery can be a difficult task for two reasons (1) Possibility of tracheal deviation or compression because of enlarged thyroid, (2) Possibility of hemodynamic disturbances including arrhythmias and hypotension related to the functional status of the thyroid. Conventional general anaesthesia with endotracheal intubation may not always be possible and even hazardous in certain situations. Endotracheal intubation can become a traumatic procedure precipitating laryngeal oedema occasionally. Anaesthetic gases, Propofol and muscle relaxants can all become arrhythmogenic in the presence of covert or even occult hypo or hyperthyroidism states. As in other situations where general anaesthesia becomes a high risk proposition, regional anaesthesia is considered the safer alternative. But for thyroid surgery, regional anaesthetic techniques have neither been adequately described nor practiced widely⁴.

Cervical epidural provides a safe and effective anaesthesia for thyroid surgery thus avoiding the potential risks associated with general anaesthesia and difficult airway. It allows early recognition of hoarseness of voice associated with recurrent laryngeal nerve injury through verbal communications. Complications of cervical epidural block include accidental dural puncture leading to total spinal, epidural hematoma, epidural abscess formation due to infection, failed block, epidural venipuncture, bilateral partial phrenic nerve palsy. But we did not note any of these said complications in our case^{2,5}.

CONCLUSION:

Cervical epidural block is a reliable alternative anaesthetic technique with good haemodynamic stability for patients with deranged thyroid function, anticipated difficult airway and serves as an excellent post

operative pain management.



REFERENCES:

1. Jain G, Bansal P, Garg GL, Singh DK, Yadav G. Comparison of three different formulations of local anaesthetics for cervical epidural anaesthesia during thyroid surgery. *Indian Journal of Anaesthesia*. 2012 Mar;56(2):129.
2. Kailash Prabhudev, Basireddy Hariprasad Reddy, Prabhakar Rao Dharmavaram. "Cervical Epidural Block as an Alternative to General Anesthesia in a Patient with Anticipated Difficult Airway and Deranged Thyroid Function for Thyroid Surgeries". *Journal of Evidence based Medicine and Healthcare*; Volume 2, Issue 19, May 11, 2015; Page: 2951-2953.
3. Barends CR, Absalom A, van Minnen B, Vissink A, Visser A. Dexmedetomidine versus midazolam in procedural sedation. A systematic review of efficacy and safety. *PloS one*. 2017 Jan 20;12(1):e0169525.
4. Khanna R, Singh DK. Cervical epidural anaesthesia for thyroid surgery. *Kathmandu University Medical Journal*. 2009;7(3):242-5.
5. Mohammed S, Santosh UP, Pereira N. Comparison of Cervical Epidural Anesthesia and General Anesthesia for Thyroid Surgery. *Int J Otorhinolaryngol Clin* 2014;6(1):1-4.