CASE REPORT

CERVICAL EPIDURAL BLOCK AS AN ALTERNATIVE TO GENERAL ANESTHESIA IN A PATIENT WITH ANTICIPATED DIFFICULT AIRWAY AND DERANGED THYROID FUNCTION FOR THYROID SURGERIES

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ABSTRACT: Choosing safe anesthetic technique is pivotal role for anesthesiologist. It depends Age, preexisting systemic diseases and Type of surgery. In this case report we have chosen Cervical Epidural Block as an alternative to General Anesthesia for a case of Adenoma Thyroid undergoing Hemi thyroidectomy with deranged thyroid function and difficult Airway.
KEYWORDS: Cervical Epidural Block, Anticipated Difficult Airway, Deranged Thyroid Function, Thyroid surgeries.

INTRODUCTION: Thyroid surgery remains one of most common challenges for an anesthesiologist in modern day medicine during perioperative period owing to the complications of deranged thyroid function in hyperthyroidism, difficult airway due to enlarged thyroid gland& post-operative pain management. The aim is to determine if Cervical Epidural Block can be considered as a reliable alternative anesthetic technique with stable hemodynamic status to general anesthesia, in patients with deranged thyroid function, difficult airway and in providing excellent post-operative analgesia[1].

CASE REPORT: A 35 years female patient weighing 55kg and 1.6m tall presented to the pre-anesthetic clinic in view of planned hemi thyroidectomy for adenoma right thyroid. History of swelling measuring 4×5 cm in front of neck 4 years associated with headaches, palpitations and significant weight loss, treated with Carbimazole 10mg thrice daily 3 months prior. On examination patient had a pulse rate of 110 beats/min, blood pressure of 130/80 mm Hg right arm supine, with no other systemic abnormalities. Airway assessment was Mallampatti Class 3 with normal cervical and temporomandibular joint mobility, interincisor distance is 2 finger breadth, indirect laryngoscopy revealed normal vocal cord movements. Investigations revealed mild to moderate hyperthyroid state with T3- 2.11ng/dl, T4-12.8mcg/dl, and TSH-0.30µIU/L. X-ray neck revealed gross tracheal deviation with mild tracheal compression. ECG shows sinus tachycardia. Other investigations were within normal parameters. Patient was classified as American society of anesthesiologist class II (ASA II) and was approved for Hemi thyroidectomy under Cervical Epidural Anesthesia in view of deranged thyroid profile and anticipated difficult airway.[1] Risks and benefits of regional anesthesia and advantages/disadvantages when compared to general anesthesia were explained to the patient and an informed, written consent was obtained. On arrival in preinduction room, an intravenous access was secured using an 18G

cannula. Patient was then shifted to the operating room and was connected to non-invasive blood pressure, electrocardiogram and pulse oximetry monitors. Patient was put in a sitting position for cervical epidural catheterization. Under all aseptic precautions parts were prepped and draped. The cervical epidural space was identified with an 18-gauge Tuohy epidural needle, at the C_7 -T_1 interspace using the loss of resistance technique via a midline cephalad approach. A 19-gauge catheter was then introduced 4 cm into the epidural space. After negative aspiration, the catheter fixed and patients was laid supine. The cephalad position of the catheter's tip was confirmed by electrical epidural stimulation test (Electrical stimulation (1–10mA) with a segmental motor response indicates that the catheter is in the epidural space). The test dose of 2% Lignocaine (3 mL) was injected via an epidural catheter; vitals [breathing, oxygen saturation, consciousness, heart rate (HR), non-invasive blood pressure and electrocardiogram] were monitored for 5 min for any sign of deterioration. After confirming no deteriorations, 8ml of 2% Lignocaine (maximum dose 5mg/kg body weight) was administered through the catheter[2] with onset of action of 10min. After measuring the pulmonary variables at 30 min post Cervical Epidural Block and obtaining bilateral sensory blockade (defined as loss of sensation to pinprick) from C2 to T1 dermatome,[3, 4] drapes were applied and surgery was started. Monitoring was done throughout the operation and vitals were recorded on monitors every 5 min. The patient was kept in a state of conscious sedation with titrated dose of midazolam and fentanyl throughout the surgery. Vocal cord functions were monitored intermittently by verbal contact with the patient. Epidural top ups with 0.25% bupivicaine 6ml were administered by monitoring patient discomfort levels.[2] Surgical Procedure took 2hrs. Patient was shifted to recovery room and monitored for 2hrs and then shifted to surgical intensive care unit with HR- 80b/m, BP-120/80mm Hg, and SpO2 -100% without any complications. Postoperative analgesia maintained with top ups of 6ml 0.2% Ropivacaine[3] for 48 hrs on complaint of pain by the patient (score of ≥5 on a 10-point numerical score). Catheter was removed after 48hrs.

DISCUSSION: A case of adenoma thyroid measuring 4×5cm on right side, with anticipated difficult airway and deranged thyroid function posted for Hemithyroidectomy. Cervical Epidural Block was chosen as anesthetic technique in view of anticipated difficult airway and cardiovascular instability associated with deranged thyroid functions under general anesthesia.[1] General anesthesia with difficult airway cart was kept as a backup plan in case of failed block. Cervical Epidural Block is advantageous technique for thyroid surgeries as it is useful in early detection of Recurrent laryngeal nerve palsy, avoid the complications associated with general anesthesia in a deranged thyroid states, complications of intubation for anticipated difficult airway, less bleeding, better perioperative pain control, early ambulation. 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.[3, 4] We did not note any of the said complications in our case.

CONCLUSION: Cervical Epidural Block is a reliable alternative anesthetic technique with good hemodynamic stability for patients with deranged thyroid function, anticipated difficult airway and serves as an excellent postoperative pain management method and is also useful for early detection of recurrent laryngeal nerve injury.

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Fig. 1A: Extracted thyroid adenoma which was compressing trachea.
1B: X-ray neck: Antero-posterior and Lateral views showing tracheal deviation and compression.
1C: Cervical epidural catheter in situ.

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