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Case Report

CERVICAL EPIDURAL ANAESTHESIA IN THYROID SURGERY

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ABSTRACT - Thyroid surgeries are conventionally performed under general anesthesia (GA). The cervical epidural anesthesia is an upcoming technique since the past few years. In our study Cervical epidural anesthesia was attempted in 10 patients and the results were compared with patients who underwent thyroid surgery under conventional general anesthesia with endotracheal intubation. All patients were maintained in a state of conscious - sedation with dexmedetomidine throughout the surgery. The biggest advantage to be gained from employing this technique lies in the avoidance of potentially arrhythmogenic inhalational anesthetics along with concomitant myocardial depression, as well as the problems associated with mechanical ventilation.

Introduction

Cervical epidural anaesthesia is a regional anaesthesia technique which has been used for upper limb surgery, upper thoracic wall surgery, carotid artery surgery and neck dissections. Epidural anesthesia is a ubiquitous technique in regional anesthesia. While the earlier trials have widely focused on lumbar or thoracic epidurals, the cervical approach has been an upcoming technique since the past few years and has attracted investigators to explore its viability for various surgeries. Administration of local anesthetic into the cervical epidural space results in anesthesia of cervical plexus, brachial plexus and superior thoracic dermatomes.^[1]

Anesthesia for thyroid surgery can be complicated due to the altered functional status

of the thyroid or its large size. The safety of cervical epidural procedures has been established By Several Studies.

Method

This study was designed to assess the effectiveness and safety of cervical epidural anesthesia for thyroid surgery. Informed written consent and routine pre-operative profile was one. Cervical epidural anesthesia was attempted in 10 patients. The epidural catheter was placed in the C (6)-C (7) or C (7) - T (1) vertebral interspace in sitting position with neck flexed and 10-12 ml of 0.25% bupivacaine was injected after test dose of 3 ml of 2% xylocaine with adrenaline.

All patients were maintained in a state of conscious - sedation with dexmedetomidine (60 to 70 mcg as loading and then 0.2 to 0.7

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mcg/kg/hr as maintenance throughout the surgery. Dexmedetomidine, an alpha 2 adrenergic agonist was used for sedation of choice for its sedation, analgesia, anxiolysis effect without respiratory depression. Any intraoperative request for rescue analgesic was managed by administering epidural top-ups (4-5 ml of 0.25% bupivacaine). Vocal cord functions were monitored intermittently by verbal contact with patient.

Results

The technique of cervical epidural anaesthesia^[2] was successfully used in all 10 patients in whom it was attempted. All patients were maintained in a state of conscious sedation and effective analgesia was obtained in all patients. There were no significant complications especially those related to diaphragmatic function and cardiovascular stability. In contrast patients undergoing surgery under conventional general anesthesia had complications related to endotracheal intubation, cardiac arrhythmias and hypotension.

Discussion

Cervical epidural anesthesia has been demonstrated to be a safe anesthetic modality for patients undergoing carotid endarterectomy, shoulder surgery and surgery for head and neck neoplasms. The incidence of complications has been shown to be quite low with only a handful of cases of post-dural puncture headache, vaso-vagal syncope and cerebral pneumocephalus having been reported as sequelae of cervical epidural instrumentation.^[3,4]

Cervical epidural anesthesia results in blockade of the cardiac sympathetic fibers and consequently mildly decreases heart rate, cardiac output and myocardial contractility. The mean blood pressure is unchanged or decreased, depending on the peripheral systemic vascular changes. Sympathetic blockade also decreases myocardial ischemia. Respiratory compromise is usually minimal. Cervical epidural anesthesia could be an excellent alternative, with the caveat that anesthesiologists attempting this procedure be highly skilled in the practice of this delicate technique. There is however, the distinct concern for airway problems in patients with pen-tracheal masses. Sudden loss of airway due to surgical compression, tracheo-malacia, or bilateral severance of the recurrent laryngeal nerve is a finite possibility. We would therefore like to recommend that cervical epidural anesthesia be only undertaken in patients with good airways that could be quickly secured in an emergent situation and in patients with no evidence of tracheo-malacia. On the other hand, patients undergoing thyroid procedures awake may be able to report hoarseness immediately thereby alerting the surgeon of the proximity of retractors to the recurrent laryngeal nerve. The main advantages^[5] of CEA are Lower cost, reduced intraoperative blood loss, stable cardiovascular status, reduced stress response, post-operative analgesia and early ambulation of the patient.

Conclusion

The technique of cervical epidural anesthesia should be considered in thyroid patients where difficult endotracheal intubation is anticipated and in those in whom alterations in thyroid functional state make them vulnerable cardiovascular complications under conventional general anesthesia.

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