

## Correspondence

# Hypoglossal nerve injury following the use of the CobraPLA™

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### EDITOR:

Hypoglossal nerve injury has been reported as a complication associated with airway management using supraglottic airways [1–5]. The CobraPLA™ (CPLA) is a relatively new supraglottic airway device. There is no report of cranial nerve injury following the use of the CPLA. We present a case of hypoglossal nerve injury after the use of the CPLA.

A healthy 51-yr-old male, height 177 cm, weight 80 kg, was scheduled for elective orthopaedic surgery for ulnar nerve palsy after right supracondylar fracture. He had no past medical history. His preanaesthetic physical examination was normal. Midazolam 3.0 mg and glycopyrrolate 0.2 mg was given intravenously for premedication. Anaesthesia was induced with propofol 100 mg and rocuronium 50 mg. A CPLA, size 4, was inserted successfully on the first attempt without difficulty. The cuff was inflated with air by using a manometer (Cuff Pressure Gauge; VBM Medizintechnik, Sulz, Germany) to a pressure of 60 cm H<sub>2</sub>O. Anaesthesia was maintained with enflurane, air and oxygen. We monitored cuff pressure continuously and kept the pressure between 60 and 70 cm H<sub>2</sub>O throughout the operation. The patient's head was placed in the neutral position during the operation. The operation was uneventful and lasted 2 h 55 min. After the patient was awakened, the CPLA cuff was deflated and expelled. There was no blood on the surface of the cuff. After discharge from the recovery room, the patient complained of a strange feeling in his tongue and some impairment of speech. On the day after the operation, his tongue deviated to the right on protrusion. Swelling was observed on the right side of the tongue. Neurological examination was otherwise normal. Diagnosis of an isolated right hypoglossal nerve injury was made. Dexamethasone 10 mg was given followed by prednisolone 60 mg day<sup>-1</sup>. After 7 days, deviation of the tongue

was much improved. After 12 days, he was discharged with only a slight deviation remaining. He was scheduled for outpatient follow-up.

The use of supraglottic airway is increasing and with it the number of complications. Supraglottic airways are relatively atraumatic, but any manipulation of the oropharyngeal cavity might lead to injury of any related structure contained therein. Hypoglossal nerve injury is a rare complication of airway manipulation using a supraglottic airway. It may be injured, alone or in combination with the lingual nerve and/or recurrent laryngeal nerve. Many cases are related to the use of N<sub>2</sub>O, the position of the patient during the operation or the preexisting disease [1–5]. Excessive cuff pressure or malposition of cuff is likely to have played a part. In this case, we did not use N<sub>2</sub>O, and monitored and kept the cuff pressure below 70 cm H<sub>2</sub>O continuously. The head was placed neutrally without fixation. The position of the CPLA had no problem clinically, but we cannot rule out the possibility of an improper position of the tongue. Also, we think that the operation time was relatively long. Even when a patient is healthy, N<sub>2</sub>O is not used, and the patient is placed neutrally; prolongation of the operation might increase the risk of nerve injury in patients using the CPLA.

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### References

1. Nagai K, Sakuramoto C, Goto F. Unilateral hypoglossal nerve paralysis following the use of the laryngeal mask airway. *Anaesthesia* 1994; 49: 603–604.

2. King C, Street MK. Twelfth cranial nerve paralysis following use of a laryngeal mask airway. *Anaesthesia* 1994; 49: 786–787.
3. Stewart A, Lindsay WA. Bilateral hypoglossal nerve injury following the use of the laryngeal mask airway. *Anaesthesia* 2002; 57: 264–265.
4. Sommer M, Schuldt M, Runge U, Gielen-Wijffels S, Marcus MA. Bilateral hypoglossal nerve injury following the use of the laryngeal mask without the use of nitrous oxide. *Acta Anaesthesiol Scand* 2004; 48: 377–378.
5. Trumpelmann P, Cook T. Unilateral hypoglossal nerve injury following the use of a ProSeal laryngeal mask. *Anaesthesia* 2005; 60: 101–102.

## Comparison of efficiency, recovery profile and perioperative costs of regional anaesthesia vs. general anaesthesia for outpatient upper extremity surgery

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### EDITOR:

There is little data to support the favourable recovery and cost profiles of peripheral nerve block (PNB) over general anaesthesia (GA). Studies have demonstrated that the recovery profile following hand, wrist or shoulder surgery has improved after regional anaesthesia (RA), resulting in a higher degree of patient satisfaction [1–5]. The purpose of this study was to evaluate the efficacy, recovery profile and perioperative costs of RA compared with those of GA in patients undergoing upper extremity surgery in our day-surgery centre.

Our Institutional Review Board approved this study. All upper extremity surgical procedures performed in our day-surgery centre from September 1999 through August 2000 were reviewed. We generated two study groups: patients who received brachial plexus block and those who received GA. Anaesthetic choice was made collaboratively by anaesthesiologists and patients according to the routine practice at our institution.

In both groups, residents supervised by staff anaesthesiologists provided anaesthesia care. Routine non-invasive monitors were used for all patients. Blocks were placed by the same care team scheduled to provide anaesthesia during surgery. No additional personnel were assigned to facilitate PNB. During block placement, light sedation was provided with midazolam (1–2 mg) and fentanyl (25–250 mcg). The brachial plexus block was administered using a single injection technique

with a 22-G, 50 mm, short-beveled tip, insulated needle (Stimuplex<sup>®</sup>; B. Braun AG, Melsungen, Germany) and a nerve stimulator (Stimuplex<sup>®</sup>; B. Braun AG, Melsungen, Germany). Mepivacaine 1.5% with sodium bicarbonate 10% v/v was used. In selected PNB patients, sedation was provided during surgery using a propofol infusion at a rate of 10–50 mcg kg<sup>-1</sup> min<sup>-1</sup>. Failed nerve blocks were converted to general anaesthesia. General anaesthesia was administered using either a laryngeal mask (in 80 of 121 patients) or an endotracheal tube (in 41 of 121 patients). Propofol was the induction agent along with a short-acting inhalation agent (sevoflurane or desflurane), fentanyl or sufentanil in titrated doses and cisatracurium, as needed for muscle relaxation. Patients were discharged from the phase-1 recovery using the Modified Aldrete Recovery Scoring System [6].

The two groups were analysed and compared based on the following data: (1) anaesthesia preparation time, i.e., the time elapsed from the start of continuous anaesthesia care until the patient was ready for surgery; (2) length of stay in the post-anaesthesia care unit (PACU) from admission to discharge; (3) number of patients who bypassed phase-1 recovery based on a modified Aldrete score of 9 or above [6]; (4) number of unplanned admissions; (5) frequency of critical postoperative complications, i.e., persistent pain management issues, intractable nausea and vomiting, postoperative airway obstruction requiring airway manipulation, aspiration and emergence delirium; and (6) all perioperative costs including admission, operating room, PACU, phase-2 recovery and pharmacy and anaesthesia supplies. Charges for surgical supplies and physician fees were excluded.

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