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CASE REPORT Open Access

A case report of lingual nerve injury after a prolonged laparoscopic cholecystectomy using supraglottic airway device (i-gel®)

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Abstract

Background This is a case report of postoperative tongue numbness after a prolonged laparoscopic cholecystectomy using i-gel®.

Case presentation A female patient 62 years old, ASA physical status II and with weight 72.7 kg, height 159 cm and BMI 28.8 kg/m^2 had general anaesthesia using i-gel size 4 as artificial airway; vital data was stable and within normal range all through the surgery, the surgery was complicated due to the presence of intra-abdominal adhesions and the surgery was prolonged to 90 min With the insertion of surgical drains, she mentioned tongue numbness at the tip of the tongue on postoperative day 1, and this was completely resolved 4 weeks later on further follow-up.

Conclusions We conclude that postoperative tongue numbness is one of the complications that should be highlighted after the i-gel®.

Keywords Tongue numbness, Supraglottic airway, Lingual nerve

Background

The lingual nerve is a branch of the mandibular nerve which is a branch of the trigeminal nerve and provides general sensation to the anterior two-thirds of the tongue, and this nerve lies deep to the hyoglossus muscle (Dotiwala and Samra 2018).

The neuropraxia of the lingual nerve following airway interventions although being an unusual complication is a potentially serious one adding to the comorbidity of the patient and providing unpleasant experience (Su et al. 2018).

This is a case presentation of postoperative lingual nerve neuropraxia after airway instrumentation using i-gel® supraglottic airway device under general anaesthesia.

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Case presentation

A female patient 62 years old, ASA physical status II and with weight 72.7 kg, height 159 cm and BMI 28.8 kg/m2 undergoing laparoscopic cholecystectomy; she had a medical background of hypertension, ischemic heart disease and hypothyroidism; and her current medications are simvastatin, paroxetine, omeprazole and levothyroxine.

She had general anaesthesia using i-gel size 4 as artificial airway, vital data was stable and within normal range all through the surgery, the surgery was complicated due to the presence of intra-abdominal adhesions, and the surgery was prolonged to 90 min with the insertion of surgical drains.

On postoperative day 1, surgical team contacted the on call anaesthetist to investigate a complain of unilateral tongue numbness on the right side. Patient was vitally stable and comfortable but reported numbness of the tongue increasing at the tip.

On investigation of the anaesthesia chart, there was no mention by the anaesthetist, who undertook the case, of any difficulty in insertion or oral trauma.

On tongue inspection, no wasting or tremors — the tongue moves freely, and there was no deviation and no dysphonia, and cranial nerves II, III, IV, VI, VII, IX, X, XI and XII showed normal presentation, and taste sensation had not been examined.

On postoperative follow-up before discharge from the hospital, patient reported that the numbness is still present, but the severity of the numbness is decreasing. Patient was told that it may take up to 6 weeks for resolution.

On further follow-up, patient was contacted by telephone, and she mentioned that all symptoms have improved around approximately 4 weeks after the operation; patient tongue sensation is back to normal with no numbness.

i-gel® is a supraglottic airway device which sits on top of the larynx with a cuff made of styrene-ethylene-butadiene-styrene (SEBS) which is an elastomer gel that does not need inflation of air through separate cuff, but instead it moulds and stabilize over the larynx, in addition to that it has a separate port for gastric tube insertion and an integrated bite block. It is single use and has different sizes, there is no consensus on the appropriate size to be used in adults, but usually size 4 is recommended by the manufacturer for adults weighting between 50 and 90 kg (Gabbott and Beringer 2007).

Supraglottic airway devices have some complications, for example sore throat and nerve injury; some risk factors for these complications are use of nitrous oxide and smaller size device which can lead to excessive cuff inflation pressure with extensive pressure on adjacent structures (Evans et al. 2015).

There are several reports in the literature of nerve injury related to supraglottic airway device used, including hypoglossal nerve and recurrent laryngeal nerve, risk factors like small LMA for size, use of nitrous oxide, overinflation of the cuff, rheumatoid arthritis, abnormal head rotation and inexperienced anaesthetist (Brimacombe et al. 2005). Some risk factors as mentioned in Thiruvenkatarajan et al., Biglioli et al., Brimacombe et al. and Hegtvedt et al. as inappropriate size, lateral position and inexperience can also contribute to lingual nerve neuropraxia (Su et al. 2018).

Although lingual nerve neuropraxia after airway instrumentation with supraglottic airway devices is an unusual complication, but we have found some case reports and studies reporting this complication especially after prolonged surgeries (Brimacombe et al. 200; Ueshima et al. 2016).

Conclusions

Lingual nerve neuropraxia after supraglottic airway instrumentation is one of the complication mentioned in the literature, and in light of this case report and other case reports in the literature highlighting this complication (Brimacombe et al. 2005; Ueshima et al. 2016), we recommend informing the patients during consent process about the possibility of this complication. We also recommend formulating local guidelines to arrange a pathway of dealing with postoperative tongue numbness after airway instrumentation for optimum patient care.

We finally recommend that using LMA with inflatable cuff instead of the i-gel® and limiting cuff inflation pressure can decrease the incidence of nerve injury complications by having a control on the cuff pressure (Michalek et al. 2015).

Abbreviations

Kg	Kilogram
SEBS	Styrene-ethylene-butadiene-styrene
LMA	Laryngeal mask airway

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Authors' contributions

MA formulated the case report, obtained the consent from the patient and followed up the patient after that. SC had done the operative care regarding anesthesia for the patient. All authors have read and approved the manuscript.

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Ethics approval and consent to participate

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Consent for publication

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Competing interests

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