Case Reports
ISSN (Print): 2394-6954
ISSN (Online) : 2394-9775
Karnataka Anaesthesia Journal *Vol 17(1&2), January-June 2019, p. 37-39* *DOI: 10.4103/kaj/2019/v17i1-2/150532*

Lingual Thyroid - Is awake Fibreoptic Intubation Ideal?

Roopa Sachidanand, Dharmesh Arvind Ladhad*, M. Anish Kumar and Vikram Kemmannu Bhat

Department of Anaesthesiology, Karnataka Institute of Medical Sciences, Hubballi – 580022, Karnataka, India; ladhaddharmesh@yahoo.co.in

Abstract

Lingual thyroid is a rare developmental anomaly, resulting from failure in the descent of the thyroid tissue. Airway management of such patients is challenging due to the presence of the vascular, fragile mass in the midline on the dorsum of the tongue with inherent risk of bleeding on touch and possible rapid deterioration in the chances of securing the airway once the bleeding starts. Preoperative airway assessment, adequate planning and preparedness, expertise can prevent catastrophic complications. Despite patient co-operation, presence of expertised personnel, unique challenges can arise on an individual case to case basis. Presence of mind and institution of novel combined manoeuvres depending upon the need of the hour can aid in overcoming the obstacles and ensuring successful outcome.

Keywords: Airway Management, Bleeding, Lingual Thyroid, Trauma

1. Introduction

Lingual thyroid is a rare developmental anomaly, resulting from failure in the descent of the thyroid tissue[1]. The prevalence ranges from 1:100,000 to 1:300,000 with female preponderance[2]. They pose a challenge to the managing anaesthesiologist in terms of airway as well as bleeding on repeated attempts at intubation[3]. We report a successful management of a patient posted for excision of lingual thyroid under General Anaesthesia (GA).

2. Case Report

A 14-year-old adolescent girl presented with history of swelling in the tongue with difficulty in swallowing for three months duration. Her past medical history was unremarkable. She weighed 40 kg, her pulse rate was 90/min and blood pressure was100/60 mmHg in left arm supine position. Her systemic examination was unremarkable. On examination a solitary swelling of about 2×2 cm in size was seen in midline, posterior third of the tongue, touching the uvula. The surface of the swelling showed increased vascularity with dilated veins. Her airway assessment was unremarkable except for this midline swelling over the dorsum of the tongue on its posterior third. There was no change in the voice or postural variations in respiration. 70° endoscopy laryngoscopy revealed a swelling on the posterior aspect of the tongue with bilateral mobile vocal cords. Her haemoglobin was 10.4g/dL, Thyroid Stimulating Hormone (TSH) was 9.51 µIU/ml (normal range 0.35-5.5 µIU/ml) and Tc99m pertechnetate scan revealed mildly increased uptake in the region of the base of the tongue. Ultrasonography of neck showed hypoplastic and altered echostexture of right lobe of thyroid measuring 19×6 mm. Morphology of left lobe of thyroid and isthmus was not defined. A well-defined homogenously isoechoic lesion, measuring 2.1×1.7 cm with echotexture similar to that of thyroid was seen in sublingual region. She was scheduled for excision of this lesion under GA. The primary

*Author for correspondence

anaesthesia plan was for Awake Fibreoptic nasotracheal Intubation (AFI) followed by GA. Informed written consent was obtained for primary anaesthesia plan as well as for possible emergency tracheostomy (as secondary plan) in the event of excessive bleeding and loss of airway while attempting to secure the airway under fibreoptic guidance.

The procedure of AFI along with the nerve blocks and topicalisation was explained to the patient. Availability of the difficult airway cart, senior experienced anaesthesiologist and surgeon experienced in rapidly performing emergency tracheostomy were ensured in the operating room during the execution of the primary plan for airway management. Routine monitoring was instituted (Pulse Oximeter, Non-invasive blood pressure, Electrocardiogram and End-tidal carbon dioxide). An intravenous (IV) line was secured and IV fluids infusion commenced. She was administered injection glycopyrrolate 0.2 mg intramuscularly. Airway anaesthesia was achieved with 4% lignocaine nebulization (6 mL), bilateral superior laryngeal nerve block (1 mL 2% lignocaine on each side) and transtracheal lignocaine infiltration (3 mL, 2%). She was administered midazolam 1 mg IV and fentanyl 50µg IV. A 6.5 size cuffed endotracheal tube was loaded on to an appropriate size flexible fibreoptic scope. While making attempts to negotiate the fibrescope into the trachea via nasal route, the swelling was repeatedly obstructing smooth passage of the fibrescope. Asking the patient to protrude the tongue out as far as possible aided in negotiating the fibrescope beyond this point. However, subsequently, the fibrescope tip could not be negotiated into the glottis despite getting full view of the glottis. During the attempts to negotiate the fibrescope tip through the glottis, it was recognised that the lingual thyroid was possibly pressing down on the fibrescope thus causing the tip of fibrescope to go towards oesophagus despite repeated attempts to guide the tip towards glottis. This also resulted in some trauma to the lingual thyroid and oozing of tiny spots of blood started. At this juncture, another anaesthesiologist (after verbally reassuring the patient and taking the patient into confidence) provided pressure over the thyroid cartilage while simultaneously the fibrescope tip was advanced forward by the fibrescopist and the patient at the same time took a deep inspiration – this combined manoeuvre successfully aided in negotiating the fibrescope into the trachea. Railroading the endotracheal tube into the trachea was accomplished with ease. After confirming the position of the tube by capnography, GA was induced. Laser excision of the swelling was done without much bleeding and after a smooth surgery and anaesthetic the patient was extubated uneventfully on the operating table. Post operatively her TSH was 48.45 µIU/ml for which she was started on tablet levothyroxine 50µg and was discharged after one week.

3. Discussion

Functioning thyroid tissue outside the normal location, commonly known as ectopic thyroid tissue, may be located anywhere along the normal developmental pathway. Such tissue may be located in the mediastinum, heart, oesophagus, or diaphragm[4,5]. Lingual thyroid is the result of failure of descent of thyroid tissue from foramen caecum of tongue. Our primary airway management plan was AFI because sedation could result in apnoea, posterior displacement of tongue or loss of patient co-operation. Furthermore, oral airway instrumentation can easily traumatise the vascular mass. A detailed airway assessment, preoperative 70° endoscopy and expertise in airway management may be useful in preventing catastrophic consequences.

Ghiasi *et al.*[6] encountered failed intubation with glidescope as the large sized lingual thyroid obstructed the view and they proceeded with tracheostomy under local anaesthesia due to lack of facility for fibreoptic technique[6]. Khatavkar *et al.*[7] reported uneventful intubation in a child with lingual thyroid for appendectomy. Indirect laryngoscopy prior to the surgery helped the authors to define the extent of swelling and mobility of vocal cords[7].

4. Conclusion

Anaesthetic management of a patient with lingual thyroid can be a nightmare to an anaesthesiologist. Preoperative airway assessment, adequate planning and preparedness, expertise can prevent catastrophic complications. Despite patient co-operation, presence of expertised personnel, unique challenges can arise on an individual case to case basis. Presence of mind and institution of novel combined manoeuvres depending upon the need of the hour can aid in overcoming the obstacles and ensuring successful outcome.

5. Reference

1. Ulug T, Ulubil SA, Alagol F. Dual ectopic thyroid: report of a case. J. Laryngol. Otol., 2003; 117:574-576. https://doi.org/10.1258/002221503322113076. PMid:12901819.
2. Douglas PS, Baker AW. Lingual thyroid. Br. J. Oral. Maxillofac. Surg., 1994; 32:123-124. https://doi.org/10.1016/0266-4356(94)90144-9.
3. Caplan RA, Posner KL, Ward RJ, Cheney FW. Adverse respiratory events in anaesthesia: A closed claims analysis. Anesthesiology, 1990; 72:828-833. https://doi.org/10.1097/00000542-199005000-00010. PMid:2339799.
4. Choudhury BK, Saikia UK. Dual ectopic thyroid with normally located thyroid: A case report. J. Thyroid Res., 2011; 2011:159703. https://doi.org/10.4061/2011/159703. PMid:21765986 PMCid:PMC3134180.
5. Eli SU, Marnane C. Ectopic, submandibular thyroid causing hyperthyroidism. J. Laryngol. Otol., 2011; 125:1091-1093. https://doi.org/10.1017/S0022215111000855. PMid:21774845.
6. Ghiasi S, Bayazian G, Khansarinia A. Dysphagia and dyspnea by lingual thyroid mass: An appropriate approach. Egyptian Journal of Ear, Nose, Throat and Allied Sciences, 2015; 16:95-99. https://doi.org/10.1016/j.ejenta.2014.11.002.
7. Khatavkar SS, Bhalekar SB, Sai N, Divya T. Lingual thyroid as anesthetic challenge. Anaesth Pain and Intensive Care, 2016; 20:59-61.