

Awake Fiberoptic Intubation in Patient with Hyperthyroidism with Goiter posted for Commando Surgery for Carcinoma Left Buccal Mucosa

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Abstract

This case report describes the challenging airway management in a 50-year-old female patient with squamous cell carcinoma of left buccal mucosa with goiter and hyperthyroidism. The patient presented with a non-healing ulcerating growth on the left cheek and required Commando Surgery. Traditional airway management methods such as bag-mask ventilation and tracheostomy were not viable due to edematous larynx presence of a large goiter. Initial attempts at awake fiberoptic intubation were unsuccessful due to swelling in the vocal cords. The patient received anti-inflammatory medications to reduce the swelling and subsequently underwent successful nasal intubation. The surgery was completed without complications, and the patient was extubated after 48 hours. This case emphasizes the importance of meticulous airway planning and the use of alternative techniques in patients with limited mouth opening and airway abnormalities.

Keywords: Difficult Airway Management; Awake fiberoptic Nasal Intubation; Hyperthyroidism; Goiter.

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INTRODUCTION

Difficult airway management is one of the core skills of anesthesiologist.

Hyperthyroidism itself leads to challenges in maintaining hemodynamics of patient intraoperatively.

When coupled with nil mouth opening with huge goiter and facial ulcer, airway management becomes very challenging.

CASE REPORT

A 50 year old female patient, weighing 47 kg, presented with chief complain of ulcerating growth arising from left side of cheek since 6-7 months.

She was diagnosed with Squamous Cell Carcinoma of left buccal mucosa for which she had taken 4 cycles of chemotherapy, (Last cycle was on 18/2/23) there was no history of radiotherapy.

She was scheduled for Commando Surgery on 15th March 2023.

She was a known case of hyperthyroidism since 10 years.



She had history of Tobacco addiction since 20 years which she stopped since last 10 Years.

She was on on Tablet Carbimazole 10mg BD since 2 months which was changed to TDS only 20 days ago and Tablet Propranolol 40mg HS.

General Examination:

The patient was examined in adequate light and exposure. Her general look was fair with pale tongue and nails.

Airway Examination:

She had nil mouth opening, mallampati score could not be assessed. Mandibular teeth were absent midline neck swelling was present which moved with deglutition.

Rest systemic examination did not show any abnormalities.

Investigations:

Her Hb was 8.9 after which she was transfused with one PCV and her Hb eventually improved to 10.5.

Her thyroid profile was as follows: TSH 0.007, Free T3 3.60, Free T4 1.77.

CT PNS with contrast revealed:

Tissue density mass lesion of size approx. 58 x 23 x 42 (AP x TR x CC) involving left buccal mucosa.

Measurements of thyroid gland were as follows:

Right lobe of thyroid 54 x 35 mm.

Right lobe of thyroid 34 x 32 mm.

Isthmus 25 x 25 mm.

Thyroid gland appeared diffusely bulky in size and showed multiple variable sized homogeneously enhancing nodules with internal cystic area and calcification area, p/o multinodular goiter.

Pre-operatively, patient was kept NBM for 10 hours, she was advised to continue her medications



X Ray Neck AP Lateral did not reveal any tracheal compression

for hyperthyroidism as per schedule. High risk consent was taken for difficult intubation.

On the day of Surgery, she was nebulized with 3ml of 4% Lox.

Inj. Loxicard 2% 4 ml, Glycopyrrolate 0.2 mg, Midazolam 1mg, Inj. Dexmedetomidine 30mcg, Fentanyl 30+20 mcg, Propofol 20+20+10 mg was given IV to mildly sedate the patient.

Awake fiberoptic intubation was attempted 3 times but failed due to edematous larynx and non cooperative patient.



OT was postponed and rescheduled on 17th March 2023 with advice of Inj. Dexona TDS, and nebulization with levosalbutamol+ ipratropium bromide and budesonide.

Neb with Budecort and Duolin BD.

On 17th March, after nebulisation with Iox 4%, awake fiberoptic intubation was again attempted after giving mild sedation to patient.

Patient was successfully intubated nasally with flexometallic ET Tube no. 7.

Ryle's tube No. 16 was inserted and patient was positioned.



After successful intubation, she was given Inj. Atracurium 25mg loading dose and maintained with Atracurium 5mg/cc infusion @ 4ml/hr. Patient was kept on volume control mode with Sevoflurane as inhalational agent.

After successful completion of surgery, patient was reversed with glycopyrrolate 0.5 mg and neostigmine 2.5 mg. Patient was fully conscious, oriented following verbal commands and was shifted intubated to ICU on Bain's circuit.

She was kept intubated for 48 hours post operatively on T piece 2 L O2 support.



After which, eventually O2 support was tapered and she was extubated successfully.

DISCUSSION

Airway management is very challenging in patients

with Nil mouth opening, in this particular case, Bag and mask ventilation was not possible due to ulcerative lesion, tracheostomy was also not a safe method due to presence of huge goitre. Only safe possible method was awake fiberoptic intubation which initially was unsuccessful due to edematous glottic structures.

Inj. Dexamethasone and nebulization with Levosalbutamol + Ipratropium bromide & Budesonide reduced inflammation. Patient was counselled again for awake fiberoptic intubation which led to successful intubation.

In such cases cannot intubate cannot ventilate condition can arise very quickly hence skeletal muscle relaxant was only given once intubation was successful with tube properly secured.

To manage risk of thyroid storm, cold IV fluids, Tab Propranolol along with all other emergency drugs were kept ready.

Patient was shifted intubated to ICU in case of oedema or need for re- exploration occurs. She was extubated only when graft appeared healthy and she was maintaining saturation with clear post operative x-ray.

REFERENCES

1. Wong J, Lee JSE, Wong TGL, Iqbal R, Wong P. Fiberoptic intubation in airway management: a review article. *Singapore Med J.* 2019 Mar;60(3):110-118. doi: 10.11622/smedj.2018081. Epub 2018 Jul 16. PMID: 30009320; PMCID: PMC6441687.
2. Olusomi BB, Aliyu SZ, Babajide AM, Sulaiman AO, Adegboyega OS, Gbenga HO, Adebisi RG. Goitre-Related Factors for Predicting Difficult Intubation in Patients Scheduled for Thyroidectomy in a Resource-Challenged Health Institution in North Central Nigeria. *Ethiop J Health Sci.* 2018 Mar;28(2):169-176. doi: 10.4314/ejhs.v28i2.8. PMID: 29983514; PMCID: PMC6016344.
3. Prakash S, Kumar A, Bhandari S, Mullick P, Singh R, Gogia AR. Difficult laryngoscopy and intubation in the Indian population: An assessment of anatomical and clinical risk factors. *Indian J Anaesth.* 2013 Nov;57(6):569-75. doi: 10.4103/0019-5049.123329. PMID: 24403616; PMCID: PMC3883391.
4. Piantanida E. Preoperative management in patients with Graves' disease. *Gland Surg.* 2017 Oct;6(5):476-481. doi: 10.21037/gs.2017.05.09. PMID: 29142837; PMCID: PMC5676164.
5. Tsukamoto M, Hitosugi T, Yokoyama T. Awake fiberoptic nasotracheal intubation for patients

- with difficult airway. *J Dent Anesth Pain Med.* 2018 Oct;18 (5):301-304. doi: 10.17245/jdapm.2018.18.5.301. Epub 2018 Oct 31. PMID: 30402550; PMCID: PMC6218389. Walsh ME, Shorten GD. Preparing to perform an awake fiberoptic intubation. *Yale J Biol Med.* 1998 Nov-Dec;71(6):537-49. PMID: 10604785; PMCID: PMC2578951.
6. Sato S, Asai T, Hashimoto Y, Arai T, Okuda Y. [Airway obstruction during attempts at fiberoptic intubation in an awake patient]. *Masui.* 2014 May;63(5):548-51. Japanese. PMID: 24864578.
 7. Cabrini L, Baiardo Redaelli M, Ball L, Filippini M, Fominskiy E, Pintaudi M, Putzu A, Votta CD, Sorbello M, Antonelli M, Landoni G, Pelosi P, Zangrillo A. Awake Fiberoptic Intubation Protocols in the Operating Room for Anticipated Difficult Airway: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *AnesthAnalg.* 2019 May;128(5):971-980. doi: 10.1213/ANE.0000000000004087. PMID: 30896601.
 8. Cabrini L, BaiardoRedaelli M, Ball L, Filippini M, Fominskiy E, Pintaudi M, Putzu A, Votta CD, Sorbello M, Antonelli M, Landoni G, Pelosi P, Zangrillo A. Awake Fiberoptic Intubation Protocols in the Operating Room for Anticipated Difficult Airway: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *AnesthAnalg.* 2019 May;128(5):971-980. doi: 10.1213/ANE.0000000000004087. PMID: 30896601.

