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Perioperative Anesthetic Management of a Patient with Oral Tongue Carcinoma and Triple Vessel Coronary Artery Disease: A Case Report

Dr. Kartik Rajgopal L. [1], Dr. Jayaraman.V.[2]

[1]Post Graduate, Department of Anaesthesiology, Sri Ramachandra Institute of Higher Education and Research Centre, Chennai, India.

[2]Professor, Department of Anaesthesiology, Sri Ramachandra Institute of Higher Education and Research Centre, Chennai, India.

Corresponding Author: Dr. Kartik Rajgopal L., Post Graduate, Department of Anaesthesiology, Sri Ramachandra Institute of Higher Education and Research Centre, Chennai, India.

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KEYWORDS

Difficult airway, Oral cancer, Frova introducer, Coronary artery disease, Anesthetic management, Case report

ABSTRACT:

Background: Patients with oral cancer often present with distorted airway anatomy and associated comorbidities that complicate anesthetic management. Coronary artery disease, particularly triple-vessel involvement with impaired ejection fraction, further increases perioperative morbidity and mortality.

Methods: We present the case of a 67-year-old male with carcinoma of the tongue, uncontrolled diabetes mellitus (HbA1c 11.2%), and newly diagnosed triple-vessel disease (LVEF 45%, RWMA, mild MR). The anesthetic strategy included invasive monitoring, optimization with beta-blockade, and preparation for difficult airway management.

Results: Initial direct laryngoscopy failed. Videolaryngoscope-assisted nasal intubation with Frova introducer successfully secured the airway without desaturation. Intraoperative hypotension and ventricular premature complexes were managed with goal-directed fluids and low-dose noradrenaline infusion. Postoperative extubation was safely performed over an airway exchange catheter. The patient had an uneventful recovery and was discharged on postoperative day 2.

Conclusion: This case highlights the importance of meticulous preoperative optimization, readiness for advanced airway strategies, and hemodynamic vigilance in managing patients with combined airway distortion and severe cardiovascular comorbidity.

INTRODUCTION

Patients undergoing oral cancer surgery frequently pose challenges to airway management due to limited mouth opening, anatomical distortion, and reduced neck mobility. Perioperative risks escalate when compounded by uncontrolled diabetes and significant cardiac disease. The American Society of Anesthesiologists (ASA) and Difficult Airway Society (DAS) recommend awake flexible bronchoscopic intubation in such patients; however, alternative strategies using videolaryngoscopes and introducers are frequently employed when fibreoptic access is not feasible[1,2].

Triple vessel coronary artery disease with impaired left ventricular function increases the risk of major adverse cardiac events (MACE). Multidisciplinary coordination, careful drug selection, and vigilant intraoperative monitoring are paramount to achieving safe outcomes[3]. We report a successful perioperative course in such a patient undergoing glossectomy with neck dissection.

MATERIALS AND METHODS

A 67-year-old man, chronic tobacco chewer, presented with a right tongue lesion (3 × 4 cm). He had uncontrolled type 2 diabetes mellitus (HbA1c 11.2%). Preoperative cardiology evaluation revealed

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tachyarrhythmia (110 bpm), frequent VPCs, ST depression in antero-inferior leads, and raised cardiac biomarkers. Echocardiography showed concentric LVH, RWMA, mild MR, and EF 45%. Coronary angiography demonstrated triple-vessel disease (LCX, LAD, PDA). The patient was started on metoprolol 25 mg BD for 5 days before surgery and was deemed fit under high MACE risk.

Airway assessment: Mallampati IV, mouth opening < 2 fingers, thyromental distance < 6 cm, restricted neck extension. CT neck revealed reactive nodes with no tracheal compression.

Perioperative preparation included:

• Arterial line (left radial)

• Large-bore IV cannula (left cubital vein)

• Difficult airway trolley with Frova introducer, bougie, videolaryngoscope

• Reserved blood units and postoperative CCU bed

RESULTS

Anaesthesia was induced with fentanyl (2 µg/kg) and titrated etomidate. Mask ventilation was confirmed before administering vecuronium.

- **Airway management:** Direct laryngoscopy failed. Videolaryngoscopic nasal intubation was attempted but unsuccessful. Intubation succeeded with videolaryngoscopic guidance and Frova introducer (7.5 mm ID ETT), fixed at 20 cm without desaturation or hemodynamic compromise.
- **Intraoperative course:** Analgesia with morphine boluses and paracetamol infusion. Occasional VPCs and hypotension were treated with PPV-guided fluid therapy and basal noradrenaline infusion (discontinued after 30 minutes). Blood loss 150 ml; urine output 1 ml/kg/hr; ABGs remained optimal.
- **Extubation:** Performed over Frova airway exchange catheter after return of consciousness and adequate effort.
- **Outcome:** Patient observed in ICU overnight, shifted to ward on POD1, discharged on POD2 uneventfully.

DISCUSSION

Airway management in oral malignancy patients requires thorough preparation. Our patient had predictors of a difficult airway—restricted mouth opening, Mallampati IV, and limited neck extension. Though fibreoptic intubation remains the gold standard [1], videolaryngoscopes with introducers like Frova provide effective alternatives when primary attempts fail [2].

Cardiac comorbidity significantly increased perioperative risk. Preoperative beta-blockade, invasive monitoring, and readiness with vasopressors contributed to stability. Intraoperative hypotension was promptly managed with goal-directed therapy, preventing myocardial ischemia. Similar cases have shown that coordinated airway and hemodynamic strategies can permit safe surgery even in patients awaiting CABG [3].

This case demonstrates how multidisciplinary planning, advanced airway adjuncts, and vigilant hemodynamic monitoring enabled successful management of an ASA IV patient.

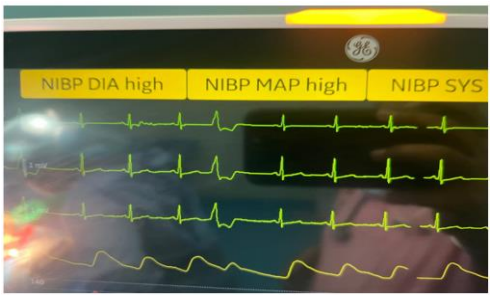

Figure 1

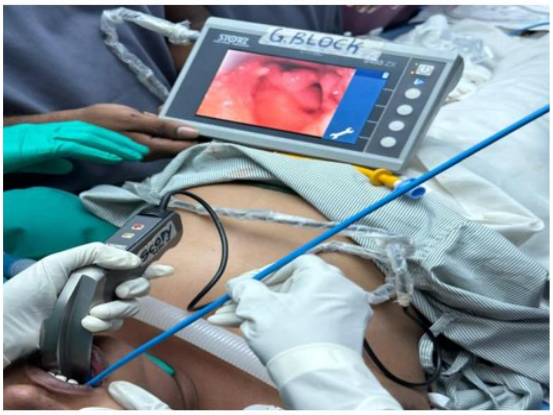

Figure 2

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CONCLUSION

Patients with oral cancer and severe cardiac comorbidities present dual challenges of difficult airway and cardiovascular instability. Successful outcomes depend on:

1. Thorough airway evaluation and preparation of alternative intubation strategies.

2. Cardiovascular optimization with beta-blockers and invasive monitoring.

3. Intraoperative hemodynamic control using goal-directed therapy.

4. Safe extubation with airway exchange catheter backup.

Acknowledgments

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Conflict of Interest: None declared.

Ethical Approval & Consent: Written informed consent for publication of this case was obtained from the patient.

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