

Post-Intubation Desaturation during Laparoscopic Sleeve Gastrectomy

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ABSTRACT:

Post-intubation desaturation is a critical complication in surgical patients, particularly those with risk factors such as morbid obesity, smoking history, and occupational smoke exposure. We report a case of acute intraoperative desaturation following intubation in a morbidly obese patient scheduled for laparoscopic sleeve gastrectomy. The case highlights the importance of prompt recognition, multidisciplinary management, and thorough preoperative evaluation, especially in high-risk patients with undiagnosed airway hyperreactivity.

Keywords: *Sleeve gastrectomy, Post intubation, Obese*

INTRODUCTION:

Post-intubation desaturation is a serious perioperative complication associated with significant morbidity and mortality. Risk factors include morbid obesity, smoking, and occupational exposure to fumes or smoke, all of which predispose patients to airway hyperreactivity and bronchospasm. Here, we describe a case of severe desaturation following intubation, emphasizing diagnostic challenges, management strategies, and preventive considerations.

CASE REPORT:

31-year-old female Patient with BMI 47.9 (171 cm, 140 kg). with history of smoking for 9 years, social alcohol use, occupation as a barbecue chef for >10 years (significant smoke exposure). No prior medical/surgical history.

Preoperative evaluation: Vitals stable (BP 128/78, HR 87, SpO₂ 98%). ECG and systemic examination normal. Consent obtained under high-risk category (morbid obesity and smoking).

- Patient after connecting to standard ASA monitoring was Induced Fentanyl 100 µg, lidocaine 100 mg, propofol 250 mg, rocuronium 100 mg. and intubated with C-MAC, 7.5 mmETT.
- Maintenance: O₂/N₂O (40:60), sevoflurane 2%, tidal volume 450 ml, RR 14/min, on Pressure controlled ventilation with PEEP 5 IP-18cm H₂O with Endtidal CO₂-38mm Hg.10 minutes post-intubation, SpO₂

dropped from 98% to 88%, HR rose to 120/min, airway pressures increased to 40 cm H₂O, auscultation revealed wheezing and diminished air entry. FiO₂ increased to 100%, manual ventilation with CPAP.

- Inj Hydrocortisone 200 mg IV, dexamethasone 16 mg IV, aminophylline infusion, and salbutamol Nebulisation via Endotracheal tube 4-5 puffs given.. Patient repositioned semi-sitting, nebulized bronchodilators given. ABG done showing PaO₂ 54 mmHg, PaCO₂ 48 mmHg (later improved to PaO₂ 76mmhg.
- Echocardiography excluded right ventricular strain; pulmonary embolism ruled out. Chest X ray showing Promineent Bronchovascular markings

Outcome:

Surgery was postponed. After stabilization, the patient was extubated with sugammadex reversal. Postoperatively, SpO₂ remained 93–96% on oxygen supplementation. CT chest revealed mild pleural thickening, atelectasis, bronchiectasis, and a posterior tracheal diverticulum. Pulmonology evaluation confirmed hyperreactive airway disease likely due to smoking and occupational smoke exposure.

DISCUSSION:

This case illustrates perioperative bronchospasm leading to acute desaturation in a bariatric patient.

Risk factors:

- **Morbid obesity:** Reduced lung volumes, impaired compliance, increased airway resistance.
- **Smoking history:** Chronic airway inflammation and impaired mucociliary clearance.
- **Occupational exposure:** Prolonged inhalation of barbecue smoke contributing to airway hyperreactivity.(1,2)

Differential diagnoses of intraoperative bronchospasm include drug-induced anaphylaxis, endobronchial intubation, aspiration, pulmonary embolism, and pneumothorax. In this patient, absence of cutaneous/cardiovascular signs, negative allergology assessment, and subsequent CT findings supported non-allergic hyperreactive airway disease with acute bronchospasm.(3-4). There are various case reports with patient factor contributing to major adverse respiratory events during induction which should be optimized before any major procedures.

Management relied on rapid recognition, escalation of FiO₂, bronchodilator therapy, corticosteroids, ventilatory adjustments, and multidisciplinary input.(5-6)

CONCLUSION:

Perioperative desaturation in bariatric patients requires vigilant monitoring, anticipation of airway complications, and a structured management approach. Thorough occupational and smoking history, preoperative spirometry, and optimization of airway inflammation are critical before elective bariatric surgery. Early multidisciplinary involvement ensured favorable outcome in this case.

Conflicts of Interest: None

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