



ANAESTHETIC MANAGEMENT OF A CASE OF MORBID OBESITY POSTED FOR LAPAROSCOPIC CHOLECYSTECTOMY

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ABSTRACT

Introduction: Managing anesthesia in obese patients can be challenging due to anatomical and physiological changes that may contribute to airway difficulties. This case report presents a case of a morbidly obese patient undergoing laparoscopic cholecystectomy, emphasizing the anesthetic considerations and strategies used to ensure a safe and effective perioperative period. **Case Report:** A 30-year-old morbidly obese female (BMI: 42 kg/m²) was scheduled for elective laparoscopic cholecystectomy. Given her obesity-related challenges, a difficult airway was anticipated. On examination, vitals were stable. Abdominal examination revealed tenderness in right upper quadrant. Blood investigations were normal. Transabdominal sonography showed numerous calculi in CBD and gall bladder. A plan of administering General anaesthesia with epidural anaesthesia for the patient was made. Preoperatively optimization was done by advising NPO, anti-aspiration prophylaxis. In the OT, all standard monitors were attached. Adequate preloading done. GA was chosen as the mode of anaesthesia. Preoperative Preparation included securing IV access, antiemetics and anticholinergics were administered. Difficult airway cart was kept ready. Induction & Airway Management was achieved through Sedation with midazolam, propofol, and fentanyl. Succinylcholine for rapid relaxation, followed by intubation with a 7.5mm flexometallic tube was done. Maintenance & Monitoring achieved through Vecuronium for muscle relaxation, anaesthesia maintained with nitrous oxide, oxygen, and sevoflurane. Continuous monitoring of EtCO₂ (30-35 mmHg) and vital signs were carried out. Extubation & Recovery was achieved by Reversal with neostigmine and glycopyrrolate. Patient extubated safely after regaining protective airway reflexes. **Conclusion:** Securing airway and anaesthetic techniques ensured a smooth perioperative course. The RAMP position was crucial in optimizing airway management. This case underscores the importance of careful preoperative planning in morbidly obese patients

KEYWORDS : CBD : Common bile duct

INTRODUCTION

The anesthetic management of an obese patient presents unique challenges due to anatomical and physiological alterations associated with obesity, which can contribute to airway difficulties. Morbid obesity is classified as a body mass index (BMI) exceeding 40 kg/m². A difficult airway is characterized by situations where a trained anesthesiologist encounters challenges with bag-mask ventilation and/or tracheal intubation [1], with face mask ventilation often being problematic in morbidly obese patients. This report discusses the anesthetic management of a morbidly obese patient scheduled for laparoscopic cholecystectomy.

Case Report

A 30-year-old morbidly obese female (BMI:42 kg/m²) with a STOP BANG score of 4/8, was scheduled for elective laparoscopic cholecystectomy. Given her obesity-related challenges, a difficult airway was anticipated.

On examination, vitals were stable. Abdominal examination revealed tenderness in right upper quadrant. Blood investigations were normal. Transabdominal sonography showed numerous calculi in CBD and gall bladder. A plan for administering Epidural anaesthesia with General anaesthesia for the patient was made.

On General Examination,

Pallor present, Weight: 108kg; Height: 160 cm BMI: 49.9 kg/m² (Class 3 obesity/ Morbid obesity); Ideal body weight: 60 kg, BP: 130/80 mm of Hg; PR: 86 bpm; Spo2: 99% in Room Air

Airway Assessment:

Mouth Opening: 2 finger breadth

No restriction in neck movements.

Mallampati Score: MP 4

Thyromental distance: > 6.5 cm

Tooth : Normal, no artificial dentures or loose teeth

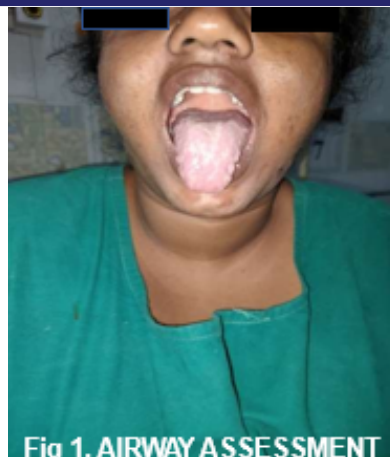


Fig 1. AIRWAY ASSESSMENT

Key Management Steps:

1. Preoperative Preparation:

- IV access secured; antiemetics and anticholinergics administered.
- Difficult airway cart was kept ready.

2. Anaesthetic Approach:

- Combined epidural and general anaesthesia.
- Preoxygenation in the **RAMP (Rapid Airway Management Positioner)** position to improve airway alignment.

3. Induction & Airway Management:

- Sedation with midazolam, propofol, and fentanyl.
- Succinylcholine for rapid relaxation, followed by intubation with a 7.5mm flexometallic tube.

4. Maintenance & Monitoring:

- Vecuronium for muscle relaxation, anaesthesia maintained with nitrous oxide, oxygen, and sevoflurane.
- Continuous monitoring of EtCO₂ (30-35 mmHg) and vital signs.

5. Extubation & Recovery:

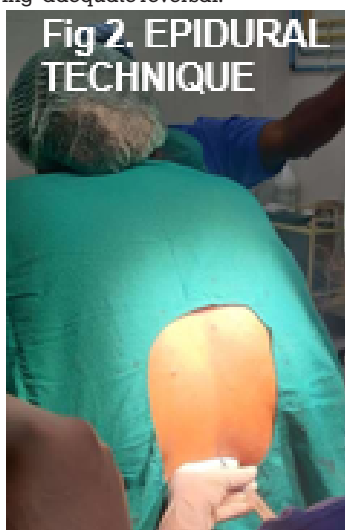
- Reversal with neostigmine and glycopyrrolate.
- Patient extubated safely after regaining protective airway reflexes

Anaesthetic Management

Upon shifting patient to OT all standard ASA monitors were attached. Under strict aseptic precautions, epidural anaesthesia was given at L1-L2 level in sitting position.

Patient was then positioned supine position with a blanket beneath the shoulder (RAMP) for intubation. Patient was pre oxygenated with 100% Oxygen for 5 minutes followed by sedation and induction with Inj. MIDAZOLAM 2mg, Inj. PROPOFOL 160 mg and Inj. FENTANYL 120mcgs. In view of difficult intubation patient was administered Inj. SUCCINYL CHOLINE 120 mg and then intubated with flexometallic tube 7.5 mm and fixed at 21cm after checking equal bilateral air entry. Inj. VECURONIUM 6mg given when patient recovered from Inj. SUCCINYL CHOLINE. 1 mg of Inj. VECURONIUM was administered at 30 minutes interval to maintain muscle relaxation; monitored with etCO₂ (maintained at 30-35 mm Hg) & vitals. Anaesthetic plane was maintained with Nitrous Oxide:Oxygen (4:2) and inhalational SEVOFLURANE (0.6-1%).

At the end of procedure, patient was administered Reversal: Inj. Neostigmine 3mg + Inj. GLYCOPYRROLATE 0.6 mg. Extubation was done after attaining protective airway reflexes and after giving adequate reversal.



DISCUSSION

In morbidly obese patients, several factors influence the administration of smooth anesthesia. The head-up position is recommended to optimize pre-oxygenation in both non-obese and morbidly obese individuals. Studies have shown that using this position during pre-oxygenation in morbidly obese patients can extend the mean desaturation time by approximately 50 seconds.

The RAMP (Rapid Airway Management Positioner) technique, which involves positioning the patient with a wedge, is more effective than the traditional sniffing position in aligning the oropharyngeal and laryngeal axes. The sniffing position, commonly used in routine general anesthesia cases, involves neck flexion and atlanto-occipital extension, which may not be ideal for obese patients due to excessive soft tissue obstructing the airway.

Given the potential for a difficult airway caused by the large soft tissue mass encroaching on the oropharyngeal-laryngeal axis, securing the airway often requires the use of appropriately sized flexometallic tubes or, preferably, awake

fiberoptic intubation.

Conflicts Of Interest:

The authors declare that they have no conflicts of interest.

Acknowledgements:

The authors declare that they have no competing interest.

CONCLUSIONS:

The successful anaesthetic management of this morbidly obese patient undergoing laparoscopic cholecystectomy highlights the importance of meticulous preoperative planning, airway management strategies, and intraoperative vigilance.

The RAMP position played a crucial role in optimizing airway alignment, facilitating intubation, and reducing the risk of hypoxia. The combination of epidural and general anaesthesia provided effective pain control and hemodynamic stability.

This case reinforces the need for a structured approach, including preoxygenation strategies, appropriate induction agents, and vigilant monitoring, to ensure safe perioperative outcomes in morbidly obese patients.

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