CASE REPORT

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# Foreign Body in an Obese Patient: Airway of Challenges and Opportunities

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## ABSTRACT

Airway management in obese patients is a challenging task in itself but when there is a foreign body present, it can pose a bigger threat. Here is a case report of successful management of a patient with morbid obesity presenting in emergency room with meat bone in esophagus. A 50-year-old male patient presented to the Casualty with history of Foreign Body ingestion hospital. The Perioperative management when dealing with an Obese patient is quite a daunting task in itself. But there can be some preoperative measures that we can take to ensure not only a smooth Induction and Operative phase but also an uneventful Postoperative stay. In summary, when dealing with an obese patient good preparation and knowledge are the keys to success. The presence of a foreign body in the airway makes it much more challenging for the anesthetist but experience, equipment and education encompasses all the challenges!

## INTRODUCTION

There is increasing prevalence of obesity worldwide. Obese patients pose unique set of challenges associated with airway management. Obese patients undergoing several surgeries present various challenges during intubation due to their altered anatomy and physiology which complicates airway & perioperative management. The common definition of difficult airway is "the clinical situation in which a conventionally trained anesthesiologist experiences difficulty with mask ventilation, difficulty with tracheal intubation, or both." [1,2] Patients at risk for increased difficulty in airway management are thus at greater risk of perioperative complications and should be properly assessed for difficult airway during preoperative evaluation.

## CASE REPORT

A 50-year-old male patient presented to the Casualty with history of Foreign Body ingestion in SRMS IMS Hospital. The patient was admitted into the ENT Department of SRMS IMS and was prepared up for Emergency foreign body removal Operation.

A thorough Pre anesthetic Evaluation was done before taking the patient up for Operation. According to the history the patient was apparently asymptomatic 1 day before when he swallowed a foreign body in the form of a meat bone while eating. He had developed difficulty in breathing since then. The patient was also a known case of Hypothyroidism since 2012 but was not on any regular medications and was morbidly obese. There was no history of any other comorbidities or history of any pre-

vious surgery. The patient belonged to middle socio - economic status with normal sleep wake cycle and normal bowel bladder habits with history of tobacco chewing occasionally which he left about 9 years ago. The patient was mixed by diet. There was no significant family history.

On examination the patient was morbidly obese with weight of 135 kg and a height of 1.72 meters thereby leading to a BMI of 45.76kg/$m^2$ comfortable in semi-recumbent position in bed. He was conscious responsive oriented to time place and person and following commands with a pulse rate of 92/min taken in the right radial artery regular, normovolemic, synchronous with no radio-radial or radio-femoral delay. All peripheral pulses were intact and walls of artery not palpable. The BP was 170/100 measured right arm in supine position. He had a respiratory rate of 18 breaths / minute with an $Spo^2$ of 94%. He was afebrile, no features of any pallor, icterus, clubbing, cyanosis, lymphadenopathy or edema and a spine of normal contour. Respiratory system was examined thoroughly. On inspection it was bilaterally symmetrical with bilateral equal movements and trachea centrally placed. On palpation all inspectory findings were confirmed and there was no local rise of any temperature or tenderness with B/L expansion of chest and bilateral equal vocal fremitus. Percussion revealed bilateral hyper resonant note in all lung fields. On auscultation bilaterally equal air entry was present with no added sounds.

On Airway Examination the patient had an adequate mouth opening of 3 finger breadth with a Mallampati grade III. The thyromental distance was 3 finger breadth with intact dentition. There was no restriction of neck movement in any plane with jaw protrusion present. The patient had a short neck with circumference of about 54 cm. There was no retro/micrognathia.

He was classified as ASA Grade 3 due to morbid obesity with uncontrolled Hypothyroidism. His blood investigations, ECG were within normal limit. His chest X-ray PA view and later view showed foreign body in esophagus near the arytenoids with no tracheal compression. Thyroid function test was done which was normal.


**Image 1: 50-year-old male patient with history of Foreign Body ingestion lying in supine position in emergency ward.**

Patient was taken up for the procedure after explaining the risk of difficult airway, informed written valid consent was taken from the patient and family members. He was shifted to operation theatre; 15-liter 100% oxygen was started with high flow nasal cannula. Two wide bore cannula was placed, all standard monitors applied and patient was put in ramp position. Difficult airway cart kept ready. His heart rate was 90bpm, BP – 140/80 mm Hg, ETCo2 – 36 mmHg, SpO2 -100% on 15 liters oxygen. Patient was premedicated with Injection glycopyrrolate .04mg iv, Injection ondansetron 8mg iv, injection fentanyl 150mcg iv, induced with Injection Propofol 170 mg iv, injection succinylcholine100 mg ventilation done with size 6 anatomical mask, size 6 Guedel airway was used along with 3 hand technique. A CMAC video laryngoscope was used to visualize the glottis, tongue was pulled forward, size 6.5 mm ID endotracheal tube was inserted to allow passage of size 7 esophagoscope to remove

the foreign body. Injection dexamethasone 10 mg iv was given to prevent airway oedema. Anaesthesia was maintained with isoflurane 1.2% plus O2 and air with flow rate of 6 liters, Injection vecuronium 8mg iv given for muscle relaxation, patient was ventilated on volume control mode with tidal volume of 650 ml, respiratory rate of 14 breaths/min, peak and plateau pressure less than 25 mmHg with PEEP of 8cm of H20 with ETCO2 in the range of 35-40 mm Hg. 8.5 mm ID endotracheal tube was exchanged with the help of gum elastic boogie due to $CO_2$ retention. After adequate respiratory efforts patient was reversed with Inj. neostigmine 5mg plus Injection glycopyrrolate 0.4 mg iv, extubated when fully awake following commands. Time of induction till recovery was 1 hour. He was kept under observation in post anaesthesia care unit for 3 hours, shifted to ward. The patient recovered successfully and was discharged the next day.

## RESULT

The Perioperative management when dealing with an Obese patient is quite a daunting task in itself. But there can be some preoperative measures that we can take to ensure not only a smooth Induction and Operative phase but also an uneventful Postoperative stay.

These measures include as first and foremost a Complete and thorough Pre anesthetic checkup and Airway assessment. Difficult airway assessment scales like The Cormack-Lehane system or the Intubation Difficult Scale can be used. It would help in analyzing the difficulties that may arise at the time of induction or during the operation.

There can be certain strategies that can be implemented for successful intubation with minimal attempts. Using advanced Video laryngoscopes or Intubating Laryngeal mask airways can be a good option. Positioning also plays a vital role in heavy built patients. The Ramped position is a very famous one commonly used for obese patients. This position has been found to improve oxygenation and laryngoscopic view during intubation by allowing for important anatomic alignment. [3,4]

Safe ventilation strategies are also of prime most importance. Adequate Tidal Volume, appropriate Positive End Expiratory Pressure and use of Recruitment Maneuvers in between, together all can ensure safe and sound intraoperative period.

Another concern for airway management in the bariatric patient is proper extubation. Just as for intubation, the patient should be placed in the ramped or 25° reverse Trendelenburg position for extubation. [5] The patient should ideally be awake with adequate reversal of neuromuscular blockade [4].One should Always be prepared for Reintubation while Extubating an Obese Patient.

Post operatively a watchful watch is a must! Use of Noninvasive Ventilation Devices like BiPAP, CPAP, HFNC can be beneficial.

## CONCLUSION

To summarize, when dealing with an obese patient good preparation and knowledge are the keys to success. The presence of a foreign body in the airway makes it much more challenging for the anesthetist but experience, equipment and education encompasses all the challenges!

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