

CASE REPORT

Anesthetic Management and Submental Intubation in Patient with Maxillofacial Injury

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ABSTRACT

Early reconstruction of facial fractures by open reduction and internal fixation (ORIF) has recently become the standard of care in the management. Submental intubation is a useful technique that is considered less invasive compared to tracheostomy in securing the airways where orotracheal intubation and nasotracheal intubation are difficult to perform, also preventing tracheostomy-related complications. Submental intubation is considered a reliable alternative to tracheostomy in patients undergoing complex maxillofacial surgeries who do not require postoperative ventilatory support. Here, we report a case of 36-year-old male patient who presented with a Le Fort II fracture.

Keywords: Intubation, Maxillofacial injury, Submental.

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INTRODUCTION

Sharing of the airway with the surgeon is always a challenge for the anesthesiologist. It becomes more challenging in patients with complex maxillofacial injury and dental occlusion. Submental intubation is a useful technique that is considered less invasive compared to tracheostomy in securing the airways where orotracheal intubation and nasotracheal intubation are difficult to perform, also preventing tracheostomy-related complications.¹⁻⁶

CASE REPORT

A 36-year-old male patient (80 kg, 175 cm) posted for ORIF of Le Fort II fracture with bilateral nasal bone fracture, and mandible dentoalveolar fracture which was confirmed using 3D X-ray imaging (Fig. 1). The patient took first aid treatment in Primary Health Care Center where his jaw was wired; because of wire in the jaw and complex maxillofacial injury, patient had nil mouth opening. He had no other comorbidity.

Hematological Investigation

Hb is 14.2 gm/dL; blood group is B positive; serology was negative. All biochemistry parameters were within normal limits. Preanesthetic evaluation revealed restricted mouth opening, and difficulty in accessing the airway, with a normal range of neck movement.

CASE DISCUSSION

Le Fort type II is a pyramidal fracture, due to trauma resulting from the impact on the midface. The fracture line extends from the bridge of the nose and extends obliquely through the medial aspect of the orbits and inferior orbital rims, continuing posteriorly as a horizontal line above the hard palate to involve the pterygomaxillary area.⁷

Airway obstruction can be life-threatening when it is associated with fractures involving the midfacial skeleton if not recognized early and treated appropriately. Oral intubation or submental route of intubation is required when there is intranasal damage

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and destruction of dentures. Airway obstruction is due to multiple sources of bleeding which blocks the upper airway in Le Fort injuries, also there is midface altered airway anatomy due to fracture line.⁷

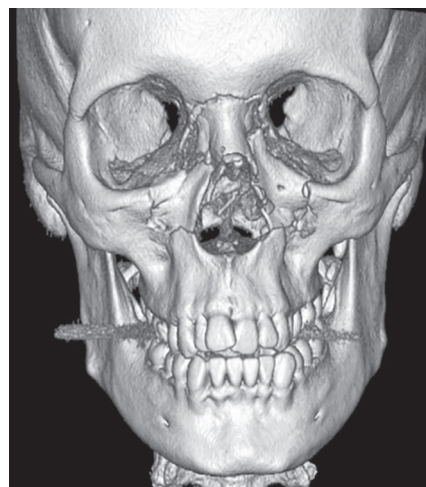


Fig. 1: 3D X-ray image



Fig. 2: Passage of endotracheal through submental space

Procedure

Standard ASA monitors were connected. The procedure of ORIF was planned under general anesthesia, and submental intubation with help of an operating surgeon was done using 7 mm wire reinforced endotracheal tube with a universal detachable connector to facilitate the free passage of the tube through submental space (Fig. 2). FGF of 4 L/minute with 50% N₂O and O₂ maintained. Open reduction and internal fixation was done and postoperatively patient was extubated after the return of airway reflexes. Vitals were stable and the patient was able to maintain a patent airway and adequate room air oxygen saturation. The perioperative period was uneventful.

CONCLUSION

Submental intubation can be considered a reliable alternative to invasive tracheostomy in patients who are undergoing maxillofacial surgeries and do not require postoperative ventilatory support. The submental route of intubation has minimal morbidity, a low associated complication, and avoids the potential complications associated with tracheostomy.

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