

Submental Route for Endotracheal Intubation in Maxillofacial Surgery

Aditi Singh^{1*}¹Reader, Department of Oral and Maxillofacial Surgery, Mithila Minority Dental College and Hospital, Darbhanga, Bihar, India.

ABSTRACT

Background: Patients with severe craniomaxillofacial injuries usually require intraoperative intermaxillary fixation to achieve optimum reduction of fractures. To avoid a tracheostomy with its attending morbidity when nasocndotracheal intubation is considered inadvisable, many techniques that involve a submandibular or submental approach for temporary or endotracheal intubation have been described. In this article we present our experience of operating 5 patients by using submental route of endotracheal intubation.

Keywords: Submental, intubation, panfacial injuries.

INTRODUCTION

Patients with severe craniomaxillofacial injuries usually require intraoperative intermaxillary fixation to achieve optimum reduction of fractures. Oral intubation can interfere with assessment of occlusion, and nasotracheal intubation may lead to complications (brain damage, leakage of cerebrospinal fluid and meningitis) when there are also fractures of the base of the skull. The last alternative i.e. tracheostomy has disadvantages such as haemorrhage, pneumothorax, pneumomediastinum or pneumothorax, injury to recurrent laryngeal nerve and tracheal stenosis. To avoid tracheostomy with its attending morbidity when nasoendotracheal intubation is considered inadvisable, submental endotracheal intubation is a useful alternative method which allows tracheal intubation by passing the tube through a submental skin incision into the mouth.

Submental intubation was reported originally by Hernandez Altemir et al in 1986. It presents undeniable advantages and near zero morbidity as in comparison to tracheostomy in facial trauma patients.

CASE REPORT

A total of five patients were operated over a eight months period for panfacial injuries. All were males and their ages ranged from 25 to 45 years. Of these, one had bilateral parasymphysis and unilateral zygomatico complex fracture and the other had high Lefort I on one side and Lefort II on other side with associated nasal bone fracture.

Technique

The patient is anesthetized and a routine orotracheal intubation is performed using a preformed cuffed tracheal tube. A 10 mm transverse submental incision is made centered on the facial midline. Another 5-8 mm transverse mucosal incision intraorally is made centered on the midsagittal plane midway between the point of reflection of mucosa from the mandible to the floor of the mouth. The incision is deepened to join the submental incision and the tract is dialated to accommodate the endotracheal tube. The connector on the orotracheal tube is removed and the tube is exteriorized via the retrogenial or submental tract and reconnected to the ventilator.

Received: July. 3, 2019; Accepted: July. 28, 2019

*Correspondence Dr. Aditi Singh.

Department of Oral and Maxillofacial Surgery, Mithila Minority Dental College and Hospital, Darbhanga, Bihar, India.

Email: Not Disclosed

After the surgical procedure, the tube connector is removed, the tube end is again delivered into the oral cavity and ventilation is continued. The submental incision is closed in 2 layers using 3-0 catgut and 3-0 mersilk and the intraoral incision is closed with 3-0 mersilk. All the patients recovered without any significant complications. The procedure took less than 10 minutes. The cutaneous scar left no esthetic damage.



Fig 1: Operative photograph.

DISCUSSION

Tracheal intubation by the submental route in treatment of complex craniofacial injuries keeps nasal and oral orifices free and allows easy reduction and fixation of fractures of midface and mandible. Also it allows for control of occlusion and avoid alternative intubation procedure.

Indications for submental intubation are :

1. Craniomaxillofacial traumatic injuries.
2. Patients with minimal neurologic deficit.
3. When short term intraoperative IMF is required to establish reduction and rigid fixation of fractures.
4. Patients with large pharyngeal flaps.
5. Combined craniomaxillofacial surgeries and rhinoplasty cases.

Contraindications for submental intubation are:

1. Patients with severe neurological deficit.
2. Patients with multisystem trauma.
3. Long term airway support and maintenance required.
4. known, severe keloid formers.

The rare complications associated with submental intubation are attributable to errors of surgical technique. The only negative response to the technique has come from the respiratory therapists. They have it difficult to suction the patient through the armoured tube while it is still in submental position. Submental intubation is a quick, simple, safe and acceptable alternative to tracheostomy for short term airway management in craniomaxillofacial surgical procedures.

CONCLUSION

Most extraoral techniques for endotracheal intubation involve various surgical approaches. These risk hemorrhage, edema and infection of the soft tissues of floor of the mouth, and damage to the lingual nerve, submandibular duct, sublingual gland, submandibular gland, facial artery, and marginal mandibular branch of facial nerve. Submental intubation is a quick, easy to learn, and safe technique for intraoperative or short-term postoperative airway management in craniomaxillofacial surgery in carefully selected patients. In our experience with this technique in 5 patients, we have not encountered any complications. Submental intubation is proved to be effective in its results and surgical time required. Also it is effective in reducing stress to the patient and the surgeon. Complications from this approach are more hypothetical than real.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Ellis E. Advances in maxillofacial trauma surgery. Saunders ;2005.p.362-363.
2. Mahmood S, Lello G E. Oral Endotracheal Intubation: Median Submental (Retrogenial) Approach. J Oral Maxillofac Surg 2002;60(4):473-474.
3. Macinnis and Baig. A modified submental approach for oral endotracheal intubation. Int J Oral Maxillofac Surg 1999;28:344-346.
4. Scafati ,Maio .Submento –submandibular intubation. Br J Oral Maxillofac Surg 2006;44:12-14.

