Sub mental Intubation in Oral Maxillofacial Surgery: A Useful Alternative to Tracheotomy. An experience from Rural Population

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ABSTRACT

Introduction: Airway Management in facial trauma cases can be done by various methods. This study evaluated the safety and efficacy of sub mental intubation for trauma patients posted for maxillofacial surgery.

Methods: This work presents our current experience using sub mental intubation in the airway management of facial trauma patients. Fifteen patients from facial trauma benefited from sub mental intubation.

Results: All the patients were males and the ages ranged from 19 to 35 years (mean, 27 years). This study totally avoids the need of tracheotomy by using sub mental intubation successfully in all patients. No intra operative and postoperative complications occurred.

Conclusion: Sub mental intubation should be used as alternative to tracheotomy, when the oral and nasal routes are not possible to use and patient ventilation not required postoperatively. It demands a certain surgical skill, which is easily acquired and is simple, safe and quick to execute.

Keywords: Intubation, sub mental intubation, maxillofacial injury.
After the surgery, the sub mental intubation was converted to an orotracheal intubation by replacing the tube in the mouth and carrying out extubation in the classical manner.

The sub mental access was sutured after extubation using sutures inserted in advance.

3. RESULTS

Fifteen patients benefited from sub mental intubation (Table I).

<table>
<thead>
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<th>S. No</th>
<th>Gender</th>
<th>Age</th>
<th>Type of Fracture</th>
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<td>1</td>
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<td>29</td>
<td>Mandible-Maxilla Le Fort II- Nose</td>
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<tr>
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<td>32</td>
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<tr>
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<td>Male</td>
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<td>Mandible-Maxilla Le Fort I- Nose</td>
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<tr>
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<td>35</td>
<td>Mandible-Maxilla Le Fort II- Nose</td>
</tr>
<tr>
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<td>25</td>
<td>Mandible-Maxilla Le Fort II- NOE</td>
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</tr>
<tr>
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<td>Male</td>
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</table>

*NOE=Naso-orbit-ethmoidal.

All the patients which were intubated by sub mental route were males and their ages ranged from 19 to 35 years (mean 27 years).

The whole process of Sub mental orotracheal intubation was completed successfully in all fifteen patients, time required to change the tube from oral route to sub mental route. (5 min +/- 0.7) An added mean time of 5 minutes for repositioning the proximal end of the tube was considered to be of significant advantage from the point of view the surgeon who had uninterfered surgical exposure of limited field of surgery available to him.

In this study, tracheotomy and its complications were avoided. Using sub mental intubation was successful in all our patients and we had no intraoperative or postoperative complication as extubation could be done easily at the end of surgery. Patients were followed up to two week postoperatively for possible complications.

4. DISCUSSION

Altemir, in 1986, first described the sub mental route for end tracheal intubation. (9) Sub mental intubation was first described as an alternative route for oral or nasal intubation, especially in cases of major facial trauma.

Other indications, such as systemic pathology or cases of simultaneous orthographic and plastic surgery, are reported. (16) Complications like haemorrhage, subcutaneous emphysema, pneumediastinum, pneumothorax, recurrent laryngeal nerve damage, stomal and respiratory tract infection, tracheal stenosis, tracheal erosions, dysphagia, problems with decanulation and excessive scarring are associated with tracheotomy, which is an alternate technique preferred by some surgeons and anesthesiologists. (17,19)

Different solutions have been proposed as an alternative to tracheotomy. Maxillomandibular fixation and nasal fracture reduction is always needed in panmaxillofacial trauma cases, which requires, switching an end tracheal tube from the nasal route to the oral route without extubation can be a good option. (11, 17, 20) This maneuver can be completed in less than 10 minutes. (17, 20) The conversion can also be completed more rapidly with the use of tube exchangers. (14, 21) Sub mental intubation is a mixture of advantages of nasotracheal intubation and orotracheal intubation which allows the mobilization of the dental occlusion, and also allows access to frontonasal fractures. (22)

The technique of sub mental intubation is easy, and the risk of damage to structures such as the sublingual
and submaxillary glands, Wharton's duct, and the lingual nerve is low (23). Our experience from this present study confirms that careful blunt dissection as close to the medial border of the mandible and good knowledge of anatomy avoid damage to the structures of the floor of the mouth. Other authors also confirm our experiences who have reported a low morbidity associated with sub mental intubation in the treatment of maxillofacial trauma. (1, 8, 9)

No episodes of accidental extubation, leaking cuff, sub mental orotracheal fistulae or anomalous scars have been reported. After the normal orotracheal intubation, the tube must be firmly secured intraorally to prevent accidental extubation during the sub mental procedure. (1)

But sub mental intubation is of limited use for patients who presents with a neurological deficit or thoracic trauma and need postoperative ventilator support. In all these cases tracheotomy is always better than end tracheal intubation. But tracheotomy is difficult to propose to patients who were suffering from an isolated facial trauma who will not require prolonged airway management. (16)

In literature it is reported that Green and Moore’s used two end tracheal tubes in their technique which only increases the time duration for sub mental intubation. It can be useful in cases where manufacturer’s design specifically prevents the removal of tube connector. (24)

In this case series there was no problem in disconnecting the tube and passing it through surgical access. We have used all flex metallic tubes made by (Rusch, Germany) a Single Company manufactured to enable easy removal of the universal connector. We have noticed that scar formation is a disadvantage of this technique; but it is by far less visible than a tracheotomy scar in as it is confirmed by Biglioli et al. (23)

5. CONCLUSION

Sub mental intubation should be used as alternative to tracheotomy, when the oral and nasal routes are not possible to use and patient ventilation not required postoperatively. It demands a certain surgical skill, which is easily acquired and is simple, safe and quick to execute. Associated complications are few and eliminate the need for tracheotomy which has built in problems and complications.

ACKNOWLEDGEMENT

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REFERENCES


