

# Submental intubation is a viable alternative to tracheostomy in facial trauma

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## DESCRIPTION

A 38-year-old man victim of a high impact motorcycle accident with cranial and facial trauma (bilateral type III Le Fort) was proposed for an open reduction and osteosynthesis of his lesion. Due to the extensive existing fracture, the preferred airway approach would be through a tracheostomy or a submental intubation. Although tracheostomy is the most used technique, it is associated with more complications such as haemorrhage, surgical emphysema, laryngeal recurrent nerve injury, tracheal stenosis, tracheoesophageal fistula and dysphagia. Submental intubation has a lower complication rate and can be performed in patients with type II and III Le Fort fractures so, it was chosen, and a balanced general anaesthesia was associated.<sup>1,2</sup>

After anaesthetic induction with fentanyl and propofol, succinylcholine was used as a muscle relaxant and orotracheal intubation was performed with a reinforced tube to prevent kinking from the angle of submental insertion. Afterwards, in cooperation with the surgical team, a 2-centimetre submental incision was performed. Initially curved forceps were introduced into the incision, passing through the subcutaneous layer, platysma, mylohyoid muscle and into the sublingual space. Afterwards, they were passed through the mucosal layers, lateral to the sublingual ducts, avoiding the sublingual gland. The superior part of the orotracheal tube was then inserted through the previously created incision and emerged in the submental region (figure 1).



**Figure 1** Orotracheal tube emerging from the submental region.



**Figure 2** Submental incision, 1 month after surgery.

Surgery progressed without any complications, the airway tube was placed in its initial position and the submental region was sutured successfully as well. The patient's wake-up proceeded calmly without any nausea or pain associated. In the immediate postoperative care, extubation was performed with the patient already awake. The patient was discharged 9 days after the surgery without any complication during his stay at the ward and returned for a follow-up appointment 1 month later, with a great recovery, with minimal scarring (figure 2).

Airway management in facial injuries is difficult and often presents a challenge as oral route makes the surgery impossible and nasal route is contraindicated due to the facial and cranial base fractures.<sup>3</sup> Tracheostomy is the most conventional technique in these cases, but it is more invasive and can lead to multiple complications, thus lengthening hospital

## Learning points

- ▶ Tracheostomy is associated with multiple complications (surgical emphysema, tracheal erosion, haemorrhage, dysphagia, problems with decannulation and excessive scarring at the exit site) that do not occur with submental intubation.
- ▶ Submental intubation is an easy technique performed by an anaesthesiologist through an orotracheal intubation and a simple surgical procedure.
- ▶ Although it is an old technique, submental intubation should not be disused and can be considered in select cases due to its reduced risk, scarring and consequent shorter hospital stay.

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stay. Submental intubation, on the other hand, is a simple technique, with a low complication risk because of the lack of large blood vessels and nerves in its tract.<sup>2</sup> In this case we present a successful submental intubation instead of the usual tracheostomy with a great postoperative outcome. This technique, created in 1986, although underused, should be considered more often in these patients' airway approach.<sup>1</sup>

**Contributors** IQM wrote the article, took the pictures and explained the informed consent to the patient was the anaesthesiologist following the patient's case. MC helped writing the case, provided critical feedback and followed the patient's case as well PF helped taking the pictures, corrected the case and translated IS provided critical feedback on the case, was the senior anaesthesiologist and corrected the final version.

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