



# Paediatric Submental Intubation : A Case Report

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## Background

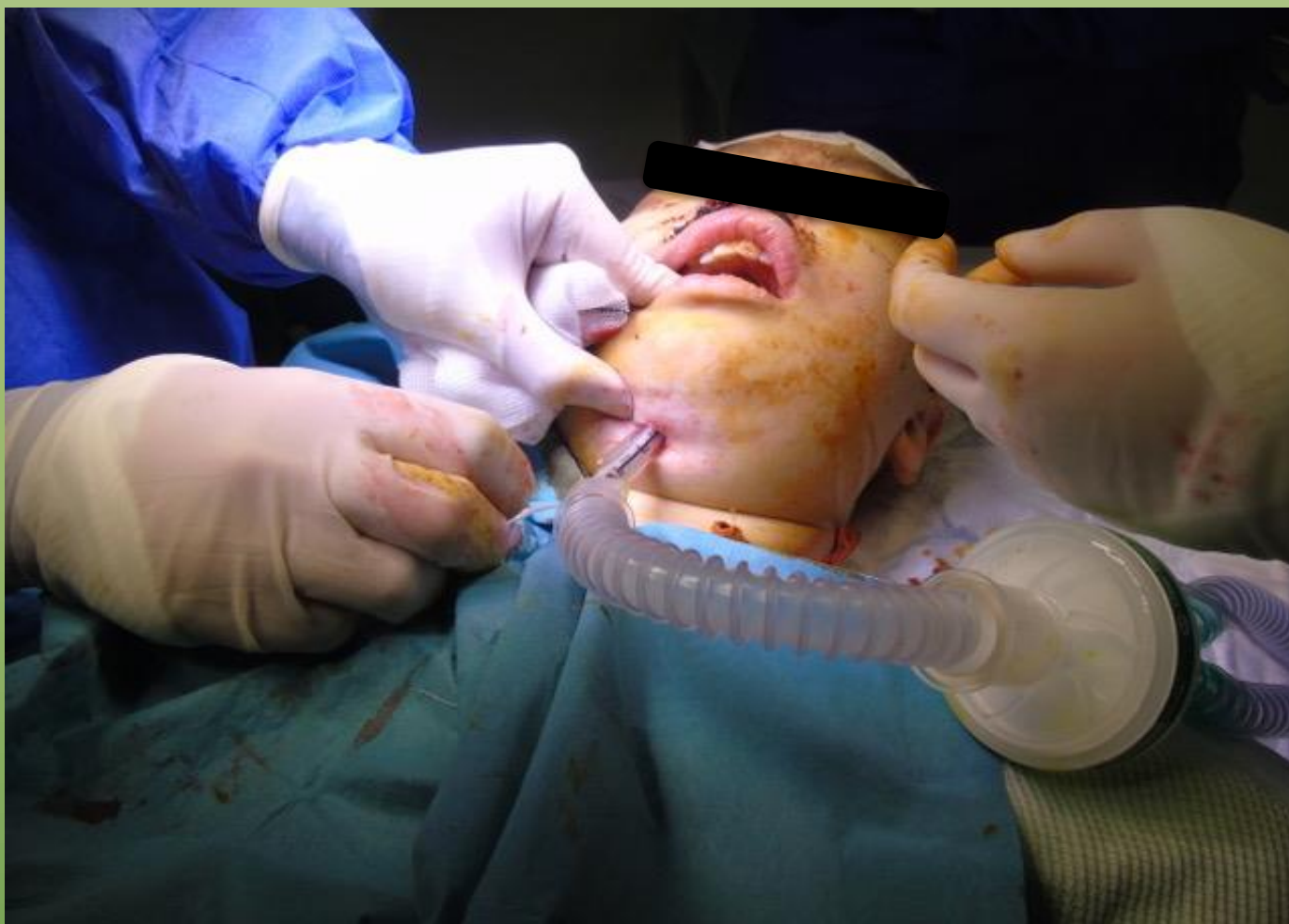
- 12 year old boy with multiple facial fractures including maxilla, mandible, orbital floor and cribriform plate. No intracranial injury.
- Extensive maxillofacial surgery planned, requiring an empty oral cavity.

## Considerations

- Mask ventilation may be compromised by inadequate seal due to facial trauma.
- Surgery precluded oral endotracheal tube.
- Nasal intubation was contraindicated.
- Tracheostomy possible but has significant morbidity.
- Surgical team requested submental intubation.
- Excellent communication, teamwork and situational awareness was required for a complex airway intervention which is an unfamiliar procedure in paediatric practice.

## Airway Plan

- A facemask was taken to the patient pre-operatively to assess adequacy of seal. Mouth opening was sufficient.
- Pre-oxygenation, intravenous induction and modified rapid sequence induction to minimise the time needed for mask ventilation.
- Oral endotracheal intubation with video laryngoscope, followed by submental conversion.
- A reinforced endotracheal tube was required to prevent kinking and obstruction due to the acute angle formed on redirecting the tube through the floor of the mouth.
- The 15mm connector cannot be removed from a conventional reinforced tube.
- The most suitable endotracheal tube is that from an intubating-LMA (Fastrach) - designed to have a readily removable connector.



## Human factors and risk management

- Liaised with adult hospital airway anaesthetist for advice.
- Plan verbalised and rehearsed with entire theatre team, with back up plan in place.
- Videolaryngoscopy was chosen to facilitate team communication.
- Consented for tracheostomy in case of failure.



## Conversion to submental endotracheal tube

- 1 • Oral intubation with reinforced iLMA endotracheal tube
- 2 • Submental surgical incision made, and forceps passed into the floor of the mouth
- 3 • Preoxygenation, then 15mm connector removed from the endotracheal tube
- 4 • Distal end of the endotracheal tube pulled through the floor of the mouth by forceps
- 5 • 15mm connector reinserted and ventilation re-established
- 6 • Procedure reversed with wound closure, allowing conventional extubation when surgery is complete

## Post operative course

- The patient was monitored on the high dependency unit for airway swelling.
- External swabs were sutured to the nasal bridge to aid the cosmetic result; these would have compromised mask seal and ventilation so it was communicated to relevant personnel that these could be removed quickly by cutting the sutures.

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