

LETTER TO THE EDITOR

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i-gel as an interface before intubation to buy safe apnea time in a patient with anticipated difficult airway due to multiple facial fractures

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Abstract

Any traumatic injury to the face can be uniquely challenging to the anesthesiologist. A difficult airway in a chronic obstructive pulmonary disease patient, non-consenting for awake intubation can pose quite a conundrum. Our patient had multiple facial fractures with limited mouth opening, making mask ventilation difficult. We found that i-gel[®] was easy to insert in a lighter plane of anesthesia maintaining spontaneous ventilation, without much manipulation. The benefits were twofold, it confirmed the ability to ventilate and secondly bought us safe apnea time before attempts of intubation were made. Supra-glottic devices are an integral part of difficult airways but i-gel[®] is uniquely simple and easy to use.

A wild animal attack can be life-threatening. The survivors of such attacks can present with significant facial injuries, which can be often challenging to the anaesthesiologists. Awake-fiber-optic intubation is not always feasible in difficult airway scenarios. Whenever possible, tracheostomy should be the last resort for securing a definitive airway. Supra-glottic airway device can be used as an interface before endotracheal intubation in a case of suspected difficult mask ventilation to check the adequacy of ventilation status as well as to buy safe apnea time while dealing with difficult laryngoscopy and intubation.

We had an 80-year-old male patient who sustained multiple facial injuries due to a bear attack. He had a scalp injury in the fronto-parietal region, displaced fracture of frontal and right zygomatic bone extending to the right maxillary sinus, bilateral comminuted orbital bone fracture (Fig. 1A), and bilateral displaced nasal bone

fracture (Fig. 1B). He came to emergency for enucleation of both eyes along with debridement and flap coverage of the defect. He gave a history of smoking one pack of cigarettes per day for 30 years and tobacco chewing for 30 years. On airway examination mouth opening was 2.5 cm, neck movement was adequate, hymental distance was 4.5 cm, and sterno-mental distance was 12.5 cm. Endotracheal intubation was planned as per the surgical requirement. The patient had a decline in cognitive function due to advanced age and decreased hearing and with added woe of blindness he did not consent to awake-fiber-optic intubation. Unsure of the airway and suspecting decreased functional residual capacity based on his age and prolonged history of smoking we avoided rapid sequence induction. The patient was para-oxygenated using nasal prongs at 15 L per minute. Glycopyrrolate was given as an anti-sialagogue. Lignocaine 10% was sprayed over the oropharynx, tonsillar pillars, and base of the tongue. Midazolam 1 mg, ketamine 30 mg, and propofol 30 mg allowed for conscious sedation. The plane was deep enough for placement of i-gel[®], supra-glottic airway (Intersurgical Ltd., UK) size 3 while maintaining spontaneous ventilation. Once ventilation was confirmed with end-tidal carbon dioxide and chest rise,

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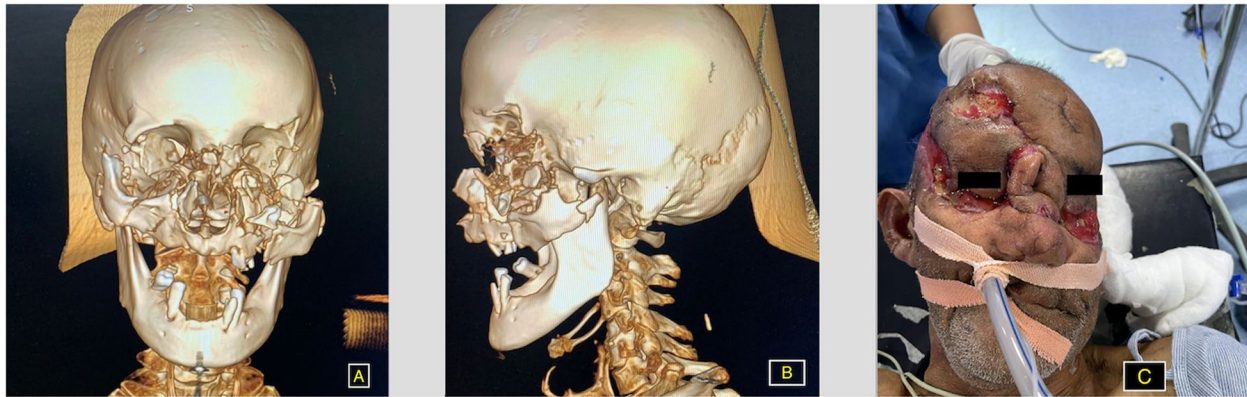


Fig. 1 Difficult airway due to multiple facial bone fractures and restricted mouth opening. **A** A difficult mask ventilation was predicted due to a displaced fracture of frontal and right zygomatic bone extending to the right maxillary sinus, bilateral comminuted orbital bone fracture, and **B** bilateral displaced nasal bone fracture. **C** A bougie-guided intubation was done airway was secured with an appropriate size endotracheal tube

muscle relaxant atracurium 25 mg was given. The patient was ventilated for three minutes; the end-tidal oxygen concentration was 95% by then. An experienced anaesthesiologist in view of the restricted mouth opening did bougie-guided intubation and secured the airway with an endotracheal tube of appropriate size (Fig. 1C). The surgery lasted for four hours. Once the patient was completely awake and was obeying commands, his trachea was extubated. He was then shifted to the post-operative area for monitoring. Fiber optic bronchoscope and tracheostomy backup were available for the case.

In a significant predicted difficulty with tracheal intubation and facemask ventilation, it is strongly recommended to consider awake intubation in co-operative elective surgical patients (Apfelbaum et al. 2022). However, the option of awake-fiber-optic intubation is not always feasible. A proper understanding and clear communication between the patient and the anaesthesiologist is a prerequisite for it. Patients' refusal is a contraindication for the procedure. Adequate pre-oxygenation is an essential step in managing a difficult airway. In this case, our patient was unable to see and thus was anxious about any awake procedure. Mask ventilation was challenging due to the fracture of the nasal bone and maxilla. Pre-oxygenation with nasal prongs was also not very effective because of a large defect in the nose. i-gel[®], supra-glottic airway (Intersurgical Ltd., UK) was fairly easy and rapid to insert in this limited mouth opening scenario without much manipulation, even in the lighter plane of anesthesia, allaying the fear of displacement the fractured segments.

Supra-glottic airway devices are an integral part of difficult airway cart (Myatra et al. 2017). Apart from being an alternative to endotracheal intubation, it can

serve as a conduit for endotracheal intubation when the patient is being intermittently ventilated. Bag and mask ventilation could be difficult and troublesome in a patient with multiple facial fractures. The anatomy of the airway could be altered and may lead to bleeding and displacement of fractured segments while attempting to form a seal. Hence airway management remains tricky in these situations. In conclusion, we wish to highlight that i-gel is fairly easy and rapid to insert, saving us critical time in difficult bag and mask ventilation. The seal provided by it is quite optimum for adequate preoxygenation. We reiterate that since a single universal technique cannot be applied to all patients, the selection of appropriate devices and techniques is vital.

Acknowledgements

We would like to acknowledge Dr. Ankit Agarwal for his immense knowledge and profound airway management skills and dedication to patient care.

Authors' contributions

SS: conceptualization; data curation; formal analysis; investigation. MD: data curation, formal analysis. BJ: investigation. ADS: data curation.

Funding

No external funding.

Availability of data and materials

Not applicable.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Written and informed consent was taken from the patient and his legal representative (patient is blind) for publication of this case report.

Competing interests

The authors declare that they have no competing interests.

Received: 8 May 2023 Accepted: 10 November 2023
Published online: 16 November 2023

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