

# Anaesthetic Management of Post Burn Contracture of Neck

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**Abstract:** *Airway management is a major challenge in post burn contracture of neck due to restricted mouth opening, reduced submandibular space compliance, reduced sternomental distance, limited atlanto occipital joint extension. There are possibilities of difficult mask ventilation and intubation.*

**Keywords:** post burn contracture, difficult air way, difficult mask ventilation, difficult intubation

## 1. Introduction

The most common contracture is flexion contracture of the neck which if not quickly corrected leads to fibrosis even before full healing of burn area. Post burn contracture is a challenging task for anaesthesiologist for securing the airway due to reduced mouth opening, restricted neck movements, stiff submandibular space, scars and contractures in suprasternal area. Larynx may be shifted from the midline.

Ineffective cricoid pressure, applying BURP maneuver may not be possible. This report highlights the anaesthetic challenge of airway management, multidisciplinary approach of management and importance of early planning of anaesthetic technique for successful intraoperative management. A 14 year male weighing 30kg presented with postburn contracture of neck from kerosene burns affecting face ,neck ,chest ,axilla,arms at the age of 12yrs was posted for contracture release and split thickness graft.

General physical examination within normal limits  
Systemic examination within normal limits

Airway examination-Mouth opening -one and half finger,mallampati grade 4,Neck movement-inadequate, sternomental distance -6.5 cm

Investigations-routine investigations are normal in both patients.

Chest X Ray, ECG normal

## 2. Methods

Proper consent taken, iv line secured, premedicationinj glycopyrolate0.1mg iv inj fentanyl 60micrograms iv,inj ondansetron3mg iv given

Inj ketamine 50mg iv given as a sedative and analgesic and preserve spontaneous ventilation until the airway is secured.

Tumescent solution (500ml ns+1ml adrenaline+1.5ml loxicard+1 ml sodabicarb)30 ml of this solution is injected to release contracture.Check ventilation done and patient was

induced with injpropofol 50mg+sevoflurane 6% with 8-10 l /min 100%oxygen.patient intubated with et tube no 6 portex tube cuffed with stylet, bilateral air entry checked and confirmation done with etco2.Patient was maintained with oxygen sevoflurane and nitrous and injatracurium 15mg iv.

Injparacetamol 450mg given for analgesia.total intraoperative fluids 300ml dns +300ml ringer lactate ws given. Intraoperatively pulse rate blood pressure and saturation were stable. Neuromuscular blockade was reversed with injection neostigmine 1.5mg iv after giving inj glycopyrolate0.2mg iv.

After thorough oral and endotracheal suction, patient extubated after becoming fully conscious with adequate motor activity and tidal volume in hyper extended position to secure skin thickness graft in situ.

Post extubation vitals stable.

Patient was observed for 24 hours post operatively and nausea vomiting and analgesia was taken care of and whole course was uneventful.

## 3. Discussion

Principle of management of potentially difficult airway in this kind of patient should include airway assessment, availability of human and material resources, airway control, monitoring and after care. Postburn contracture patients can be operated by both general and local anaesthesia depending on scar area, age of the patient, patient consent and resources availability.

Awake intubation, percutaneous technique, supraglottic airway devices (igel, lma, intubating lma) or by maintaining spontaneous ventilation by blind nasal or flexible fiberoptic bronchoscope are options for inducing the patient. Though fiberoptic intubation is a gold standard ,it comes with the disadvantage of not getting an ideal position leading to a difficulty in negotiating a fibre scope or guiding an endotracheal tube over it. Percutaneous techniques have limitations because of fibrous bands and distorted anatomy of the trachea.

After considering all the options we considered conventional anaesthetic technique with tumenescent local anaesthesia to release neck contracture band supplemented with inj ketamine 1mg /kgiv as sedation and analgesia.

Problems associated with extubation with such kind of cases can be avoided with use of airway exchange catheters.

#### 4. Conclusion

Patient with PBC NECK presents with special challenges for intubation skills of anaesthesiologist .It requires availability of different modalities of difficult airway cart.



Conventional laryngoscopy with tumenescent anaesthesia offers highest success rate.

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