

CASE REPORT

ANAESTHETIC MANAGEMENT OF A POST BURN CONTRACTURE PATIENT: A CASE REPORT

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ABSTRACT: Airway management in a post-burn contracture patient is unique challenge due to scar contracture head and neck region. A female with 70% burn along with history of post burn scar tissue over the neck region, MP-3, reduced thyromental distance & mouth opening undergone release of nostril blockade with the help of difficult airway kit under general anaesthesia.

KEYWORDS: Airway management, Post burn contracture, Released scar tissue, difficult airway kit.

INTRODUCTION: Anaesthetic management of a post burn contracture patient is an unique challenge during airway management due to the normal anatomy of larynx and mandible is distorted, more over the presence of scar tissues over the face and neck region, limited cervical range of motion and also Sniffing position may be unobtainable due to the scar contracture.^[1,2,3]

CASE REPORT: A 45 Years Hindu female from Amarpur, teacher by profession admitted in AGMC & GBP hospital on 24th May 2014 in the department of otorhinolaryngology with Chief complaint of:

1. Difficulty in breathing, for 2 weeks.
2. Nasal blockade off and on.

H/O PRESENT ILLNESS: She gave a history of burn 12 years back by burst of a table lamp while she was cooking. Almost more than 70% body surface area burned, results in left nostril blockade, also she was complaining of mild difficulty in breathing especially during winter, not associated with any posture or exertion along with nasal blockade, snoring off and on but there is no history of cough, chest pain, bowel & bladder problem.

Past History: Not significant.

No significant Family history, Drug & food allergy, menstrual history.

Personal History: Occasionally consumes pan.

General Physical Examination:

- No pallor, icterus, cyanosis, edema, clubbing, koilonykia, lymphadenopathy, neck vein engorgement.
- Vitals: BP 130/80mmhg, PR- 80/min, on supine decubitus.

Local Examination:

- 70% total body surface area burn (Rule of nine), contracture over neck, back, face, both arm, upper 1/3rd of both forearm, chest, abdomen, thigh of both limb.

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Systemic Examination:

1. RESPIRATORY: left nostril stenosis.
2. CNS- NAD.
3. CVS-S₁S₂ heard, no added murmur.
4. G.I TRACT: soft, bowel sound heard.

Provisional Diagnosis: Post burn contracture left vestibular stenosis.

Surgery Planned: Release of left vestibular stenosis.

Type of Anesthesia: General endotracheal Anaesthesia.

INVESTIGATIONS:

- CBC: HB%-10.4gm%, TLC-5600/cumm, Platelet count-2 lakh/cumm, S. electrolytes (k+-4.5meq/l, Na+-138 meq/l), LFT: normal, S. urea: 27mg/dl, S. creatinine: 0.8mg/dl, Chest x-ray: WNL, ECG: NORMAL.
- X-RAY soft tissue neck: lateral—no compression, AP: MILD RIGHT SIDED DEVIATION of trachea.

PRE-ANAESTHETIC EVALUATION:

Direct Assessment of Airway:

- Neck flexion: around 15- 20deg.
- Neck extension: 70deg.
- TM joint function: mouth opening < 2 finger.
- Thyromental distance: 6cm.
- Hyomental distance: 5cm.
- Mallampati grading: grade 3.
- ASA grade: 1 & Spine: normal.



Figure 1

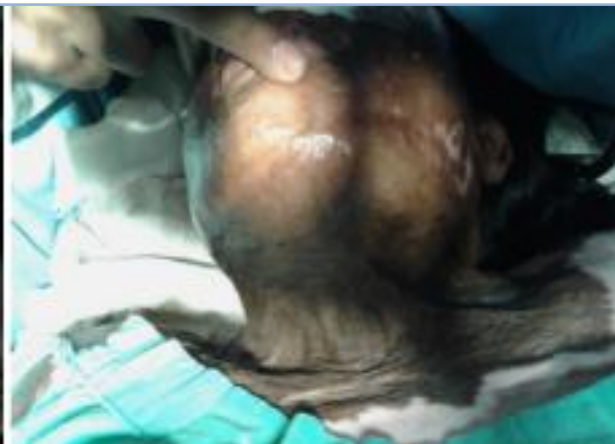


Figure 2

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INTRAOPERATIVE MANAGEMENT

- Emergency equipment's and drugs were kept ready (malleable bougie, stylet, airway, laryngoscope. With different blade sizes, LMA, different sizes of ET tubes, suction apparatus)



Figure: 3, 4, 5, 6

Premedication: Inj. Glycopyrrolate 0.2mg, Inj. palonosetron 75mcg, Inj pantoprazole 40mg i.v route
All vital monitors, i.v access, urinary catheter were established.
Pre-oxygenation for 5 min.

Induction of Anaesthesia: Inj. Propofol 90 mg – Bag mask ventilation along with Guedel's airway- - Inj. succinylcholine 75mg i.v -- Laryngoscopy performed with difficulty due to inadequate mouth opening and restricted neck movement (Cormack & Lehane grade 3) -- Et tube cuffed oral pvc 7mm cuffed tried with the help of malleable bougie but failed -- Airway than secured with oral pvc 6.5mm id ET tube assisted with bougie

Duration of procedure: 1hr.

Maintenance of Anaesthesia:

- With oxygen in (66%) nitrous oxide, inj. Atracurium 25 mg bolus, sevoflurane 0.4% intraoperative fluid: R/L—5% dextrose.
- Inj hydrocortisone 100 mg i.v

Reversal done:

- Inj. Glycopyrrolate 0.5mg & inj. Neostigmine 2.5mg with proper suctioning.

Post-operative: vitals stable, concious, reflexes regained, no immediate anaesthetic complication.

DISCUSSION:

- In the burn patient with head and neck contractures, the ASA Difficult Airway Algorithm recommends that alternative means of securing an airway be tried only after standard attempts at direct laryngoscopy have failed.²
- Restrictions in mobility due to displacement of mandible posteriorly.²
- History of inhalational injury may suggest tracheal stenosis which could hamper advancement of endotracheal tube.³
- Position: sitting is ideal for airway assessment.¹

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- Mentosternal contractures may limit the mouth opening and cervical range of motion. Oro-maxillo-facial burn scars may accompany skeletal deformities resulting in a small receding jaw.¹
- Examine the scar and contracture, paying special attention to the perinasal and circumoral regions and the size of the nasal and oral orifices.³
- The directions and formations of scar patterns the epiglottis and vocal cords may be anteriorly placed and pulled toward the side of the scar. If a laryngoscope is used, it should be advanced ipsilaterally towards the direction.¹
- When muscle relaxants are given, the elasticity of scar tissue and loss of pulling action by the surrounding tissues will further aggravate scar retraction, making preop airway evaluation obsolete.²
- The Laryngeal Mask Airway has proven to be an excellent airway adjunct for the burn patient. But frequent intra-operative position changes and topical medication to burn sites may make it vulnerable to displacement.⁴
- Blind nasal intubation may be tried but restricted head and neck positioning and the possibility of nasal bleeding which can completely obscure any further instrumentation.²
- Inadvertent esophageal intubation due to thick scar tissue may obscure light and limit tracheal visibility.⁵
- Video laryngoscopy (c-track) fast track LMA & Fiberoptic intubation may be other aid for difficult intubation. but Fiberoptic intubation may be the least traumatic and most efficient alternative to direct laryngoscopy in patients with post-burn scar contractures of the neck.⁶

REFERENCES:

1. Hagberg C, Johnson S, Pillai D. Effective use of the esophageal tracheal Combitube™ following severe burn injury. *J Clin Anesth.* 2003; 15:463–466.
2. Kumar R, Prashast, Wadhwa A. The upside down intubating laryngeal mask airway: A technique for cases of fixed flexed neck deformity. *Anesth Analg.* 2002; 95:1454–1458.
3. Rashid M Khan, MD Maroof, Haris M Khan *Airway Management* 4th edition Paras 201.
4. Hagberg C. *Benumof's Airway Management*. 2nd ed. Philadelphia: Mosby Elsevier 2007.
5. Henderson J, Popat M, Latta I, Pearce A. Difficult Airway Society guidelines for management of the unanticipated difficult intubation *Anaesthesia* 2004; 59: 675-94.
6. Nahlieli O, Kelly JP, Baruchin AM, Ben-Meir P, Shapira Y. Oro-maxillofacial skeletal deformities resulting from burn scar contractures of the face and neck. *Burns.* 1995; 21:65–69.

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