

Anaesthetic Management of a case of Ludwig's angina: Lessons learnt

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Abstract

Introduction: Ludwig's angina is a fatal infection of oral cavity involving the submental region and neck which often leads to stridor and respiratory distress.

Case history: 19-year lady with Ludwig's angina following dental sepsis presented for surgical drainage. After clinical and radiological pre operative evaluation she was taken up for surgery under General anaesthesia. Bougie assisted Intubation with 6.5 ETT using C MAC was done and septic focus was drained.

Discussion: Any one of the following modalities namely elective tracheostomy, awake nasal intubation or video assisted fibre-optic intubation can be considered in LA. The choice of airway management must be customised depending on the patient characteristics, disease extent and expertise of the anaesthetic team

Conclusion: Fibreoptic intubation is a novel and less invasive method of securing airway in patients with deep neck infection and should now be a suitable substitute for the gold standard tracheostomy in managing LA.

Key-words: Ludwig's angina, difficult intubation, video assisted intubation

Case report

19-year lady presented with breathlessness for 5 days. She had H/O Dental caries for which dental clean-up was done 6 days ago. She had no comorbidity like diabetes and hypertension. On examination she was febrile, toxic and orthopneic. BP: 144/107 HR: 136/min SPO2 on room air: 92%. Weight 70kg. Local examination showed mouth opening of < 2 finger breath and Mallampati score of 4. She had warm, tender and diffuse indurated swelling in the submental and submandibular region. Clinical diagnosis of Ludwig's angina was made and routine pre operative blood tests were done. She had neutrophilic leucocytosis and blood sugar was normal. CT imaging of face & neck showed inflammatory phlegmon in the floor of the mouth.[Fig 1& 2]

Surgical team planned to drain the septic collection in the oral cavity under general anaesthesia. Hence informed consent was obtained explaining the risks of anaesthesia and need for tracheostomy was also explained. All sizes of ETT from 4.5 to 7 were kept ready and tracheostomy set was kept as stand by. After 10 minutes of preoxygenation in supine propped up position General anaesthetic drugs were given intravenously.

- InjGlycopyrrolate : 0.2mg IV
- InjDexamethasone : 4mg IV
- Inj. Hydrocortisone : 100mg IV

- Inj Fentanyl : 100 microgram IV
- Inj Propofol : 120 mg IV

Bougie assisted Intubation with 6.5 ETT was performed using C MAC [Fig 3 & 4]. Tracheal position was confirmed with auscultation and ETCO₂ in the monitor. Inj Scopolamine 100mg and then Inj Vecuronium 6mg were given. Using 100 % FiO₂ and Sevoflurane, SPO₂ was maintained around 98% intra operatively. Post operatively, Controlled ventilation was maintained till 2nd POD in ICU with Inj Nor adrenaline drip for treating hypotension. Finally, she was shifted to ward on 4th POD and discharged after 2 weeks

Discussion:

Ludwig's angina (LA) is a fulminant cellulitis of the neck that spreads via continuity of the fascial planes. Treatment of LA includes aggressive antibiotic therapy as well as surgical drainage in many cases. Following points to be borne in mind in airway management of LA.

Proper preoperative assessment of patients with LA should include identifying features that may cause difficulties with mask ventilation, direct laryngoscopy, and intubation. We should look for restricted neck movement, trismus, dyspnea, and stridor which can result in difficult airway management [1]. The Mallampati classification yields information about mouth opening and tongue size relative to the pharyngeal space. Most patients with LA will be Mallampati 3 or 4, such that difficult intubation and mask ventilation should be anticipated in most of the cases. We avoided the use of any neuromuscular blocking agent before securing the airway. Intravenous dexamethasone was given to reduce airway oedema [2].

Review of preoperative computed tomography scans with the treating surgeon can aid in determining the extent of pharyngeal and hypopharyngeal swelling. Marking external anatomical airway landmarks prior to manipulating the airway can save vital time if an emergent airway becomes necessary. Three of the most commonly used intubation techniques for patients with LA include elective tracheostomy, awake blind nasal intubation, and flexible fibre-optic nasal or oral intubation [3].

More recent reviews of anaesthesia management in LA report good results without the use of tracheostomy [4]. The choice of airway manoeuvres must be individualized depending on the severity of the disease, and experience of the anaesthetic team.

Conclusion

Fibreoptic intubation is a sophisticated and less invasive method of securing airway in patients with deep neck infection and should now replace the gold standard tracheostomy in managing LA.

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