

Alternative Technique Of ILMA Insertion In A Case Of Post Burn Neck Contracture Release

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Abstract

Fixed flexion deformity of neck presents as difficult airway due to non alignment of oral/pharyngeal and laryngeal planes for intubation. These deformities are managed along the awake limb of difficult airway algorithm (1).

Contracture of the neck is a common complication of burns. These patients usually present to plastic surgery departments for release of contractures. Airway management in these patients is always a challenge. We are presenting a case of patient who had severe contracture of the neck where ILMA insertion with a 180° rotation technique was successfully used for airway management.

CASE REPORT

A 35 year old female weighing 50 kg with severe post burn contracture of the neck and chest presented to the Operation Theater for contracture release and skin grafting. Preoperative examination showed fixed flexion deformity with reduced mouth opening of one and half fingers (25 mm). General and systemic examinations were within normal limits. Preoperatively difficult intubation was anticipated.

Figure 1



On the day of operation patient was premedicated with injection (inj) glycopyrrolate 0.2mg intramuscular one hour

prior to surgery. In the operation theatre after establishing an intravenous (iv) access routine monitors were put in place. The patient was preoxygenated with 100% oxygen and anesthesia was induced by slow iv infusion of inj propofol 1% and incremental concentration of halothane in oxygen. Care was taken that the patient's spontaneous respiration was maintained. After attaining sufficient depth of anesthesia an intubating laryngeal airway mask (ILMA) no 3 was tried to be inserted but due to reduced mouth opening and fixed flexion deformity the handle of ILMA repeatedly got stuck against the patient's chest. ILMA insertion was reattempted after increasing the depth of anesthesia via 180° rotation technique. The ILMA was held in such a manner that machine end and superior surface of handle face cephalad and the mask portion slipped between upper and lower incisors. Once the mask portion was inside the mouth up to its angulations it was rotated 180°. The ILMA slipped comfortably inside the mouth. The trachea was successfully intubated through ILMA using no 7 armored tube. Its position was checked by auscultation and capnograph. Muscle relaxation was then established. ILMA removed. The remainder of anesthesia was uneventful.

DISCUSSION

Patients such as ours pose a real challenge to anesthesiologists from maintenance of airway and ventilation during anesthesia. Use of standard laryngoscope

is not possible in such cases due non alignment of oral/ pharyngeal axis making intubation difficult. The use of the awake limb of the airway algorithm is the only alternative left for intubation in such cases. Various alternative approaches that can be tried in such cases are

- A. Fiberoptic guided intubation
- B. Blind nasal intubation
- C. ILMA
- D. LMA
- E. Contracture release under Ketamine followed by intubation/ ILMA/LMA

ILMA is a rigid preformed device and a minimum distance between patient hard palate and anterior most part of chest/ neck is required for its action. This distance should be equal to shortest distance between the tip of mask portion and the machine end. In cases where this distance is reduced the machine end of ILMA can not be lowered enough to align the pharyngeal surface of ILMA with hard palate. Thus when machine end impinges on anterior most part of chest the tip of mask portion of ILMA faces downwards and hits the lower incisors or gum. In our case also the distance between patient mouth and chest was reduced due to contracture. Reason for success of ILMA in reverse portion is due to:

- A. Use of ILMA in upside position shift the machine end of ILMA from the chest towards front of patient nose thus escaping ILMA getting stuck at patient chest.
- B. Once the mask of ILMA went inside the mouth the effective length of ILMA shortens and thus sticking of ILMA on anterior chest is overcome when ILMA is rotated.

This innovation of introduction of ILMA in upside down position has been first described by Rakesh Kumar et al⁽²⁾. They found that this technique is beneficial in cases of fixed neck deformity, patients with large growth in neck, short neck with truncal obesity/ large breasts and bulky dressing

on neck and chest.

A common problem which may come up during use of ILMA in upside down position is inability to rotate the ILMA. This problem is due to incompressibility of tongue and soft tissue under it into the submandibular space. Use of ILMA in fixed flexion deformity has met with success⁽³⁾ and failures⁽⁴⁾ by different authors. After successful placement of ILMA blind passage of armored tube is well documented.⁽⁵⁾

Use of LMA may also prove to be difficult in such cases and is due to acute angle between pharyngeal and oral axis inability to fully apply the recommended technique of LMA insertion.⁽⁶⁾

CONCLUSION

This technique may be viable alternative for securing airway and intubation in patients of fixed flexion deformity even with limited mouth opening

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