

Using Suction Catheter as a Guide for Awake ProSeal LMA Insertion in a Patient with Restricted Neck Extension: A Case Report

Dr. Deepak Singla¹; Dr. Shreya Singh²; Dr. Jasnoor Kaur³; Dr. Jaspreet Kaur⁴

^{1,2,3,4}Department of Anaesthesiology All India Institute of Medical Sciences Rishikesh Rishikesh, India

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Abstract: We describe the successful awake insertion of a ProSeal Laryngeal Mask Airway in a 28-year-old male with restricted mouth opening, Mallampati IV airway, and limited neck mobility posted for reconstruction of post maxillary defect and flap reconstruction. A suction catheter was used as a guide to facilitate smooth placement after topicalization with nebulized lignocaine. Ventilation was adequate throughout surgery, and the intraoperative and postoperative courses were uneventful. This case highlights guided awake SAD insertion as a simple and effective alternative in anticipated difficult-airway situations.

Keywords: Awake Airway Management; ProSeal LMA; Difficult Airway; Restricted Mouth Opening; Supraglottic Airway Device; Suction Catheter-Guided Insertion; Maxillectomy; Limited Neck Mobility.

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I. INTRODUCTION

Supraglottic Airway Devices (SADs) are commonly used alternatives to conventional intubation techniques and have successfully secured airway in patients who are otherwise difficult to intubate. In comparison to previous designs, secondgeneration SADs, especially the ProSeal Laryngeal Mask Airway (PLMA), have shown improved seal pressures, integrated stomach drainage, and improved safety profiles during the past 20 years. Awake insertion of a SAD, though less commonly described, can offer a practical and less stimulating alternative to awake fiberoptic intubation in select situations. However, its success relies on gentle, wellcontrolled insertion techniques that avoid excessive headextension or force.

Various adjuncts have been explored to facilitate atraumatic SAD placement in anatomically difficult scenarios. The use of a flexible suction catheter as a guiding conduit offers a simple, widely available, and cost-effective technique to direct the device smoothly along the oropharyngeal curve, potentially reducing insertion resistance and airway trauma.

Here, we report the successful awake placement of a ProSeal LMA using a suction catheter as a guide in a patient with markedly restricted neck extension, highlighting its feasibility, safety, and potential role in difficult-airway management algorithms.

II. CASE REPORT

A 28-year-old male patient presented with post maxillectomy (for inverted papilloma) defect on right side and was posted for the reconstruction of the defect. Pre-anesthetic evaluation revealed multiple predictors of difficult airway: restricted month opening (2.0 cm), and a large tongue (Mallampatti class IV) and markedly reduced neck mobility due to a radial forearm free flap inset extending across the neck region. So, in view of anticipated difficult mask ventilation, a decision to insert LMA was made. Written informed consent was taken the day before planned procedure.

In preoperative room, he was nebulized with 4 ml of 4% lignocaine approximately 30 mins before shifting the patient to operation theatre with the aim of achieving adequate airway topicalization while maintaining spontaneous ventilation. In the operating room, standard ASA monitors were attached, including non-invasive blood pressure, electrocardiography, and pulse oximetry. The patient was positioned in a comfortable, neutral alignment to avoid undue strain on the neck flap. Supplemental oxygen was administered via facemask at 4–5 L/min. A size 3 ProSeal Laryngeal Mask Airway (PLMA), appropriate for the patient's body weight, was prepared. A soft suction catheter (14 Fr) was preloaded through the gastric drainage channel of the PLMA to act as a semi-rigid guiding conduit. This assembly was well-lubricated to minimize oropharyngeal

trauma. After explaining the steps and reassuring the patient, the PLMA–catheter assembly was introduced gently into the oral cavity. The device was advanced along the dorsum of the tongue with minimal force, while the patient was instructed to perform swallowing movements to facilitate smooth passage past the oropharyngeal curve. The combination of adequate topical anesthesia, preserved spontaneous breathing, and guided insertion technique allowed atraumatic placement of the device without provoking gagging, coughing, or distress.

Correct positioning was confirmed by adequate chest rise, stable capnography waveform, and satisfactory tidal volumes on assisted ventilation. Following successful placement of the ProSeal LMA, the patient was induced with Inj Fentanyl 2mcg/kg iv, Inj Propofol 2mg/kg followed by Inj Vecuronium 0.1mg/kg iv. Further intraoperative course proceeded uneventfully. Ventilation remained adequate throughout the procedure with stable hemodynamics and no airway-related complications. At the conclusion of surgery, the device was removed after ensuring complete return of protective airway reflexes and adequate spontaneous ventilation. The patient had an uneventful postoperative recovery and was shifted to the recovery area fully awake and comfortable.

III. DISCUSSION

LMA has proven its efficacy in cases of difficult intubation and/or mask ventilation.[1] Their design allows adequate ventilation with minimal manipulation of the head and neck, making them valuable adjuncts in patients where conventional laryngoscopy may be unsafe or unsuccessful. Supraglottic airway devices are now a part of American society of Anaesthesia difficult airway algorithm.[2] However a restricted mouth opening, and a distorted upper airway anatomy might serve as a deterrent to its use. Traditionally, a minimum inter-incisor distance of 2–2.5 cm is considered necessary for standard LMA placement. Reduced access, combined with anatomic distortion, not only increases the risk of insertion failure but may also increase patient discomfort and airway trauma, particularly in awake or minimally sedated patients. Nevertheless, there are few case reports in literature where supraglottic airway device were successfully used in patients with restricted mouth opening and upper airway pathology. [3,4] The technique has advantages in resource-limited settings where specialized awake-intubation equipment may not always be available.

By demonstrating the viability of awake ProSeal LMA insertion utilising a straightforward, widely accessible adjunct—the suction catheter—the current case contributes to this expanding body of evidence. In order to help the device maintain its natural curvature while navigating the modified airway passage, the catheter serves as a semi-rigid guide. When used in conjunction with sufficient topical anaesthesia and gradual verbal coaching, this technique may lessen resistance, prevent the use of unnecessary power, and improve patient comfort. In environments with limited resources, when specialised awake-intubation equipment may not always be accessible, the procedure has advantages.

Awake SAD placement also offers several physiological and safety benefits: preservation of spontaneous breathing, avoidance of neuromuscular blockade, maintenance of airway reflexes to some degree, and better patient cooperation. For short elective procedures where endotracheal intubation is not mandatory, this approach may offer a practical alternative to awake fiberoptic intubation—especially when fiberoptic equipment is unavailable, or when distorted anatomy reduces the likelihood of fiberoptic success.

IV. CONCLUSION

In patients of difficult airway posted for elective procedures of short duration, awake insertion of supraglottic airway devices like proSeal laryngeal mask airway can be considered as an alternative to fiber-optic intubation. With adequate topical anesthesia, patient cooperation, and use of simple guiding adjuncts like a suction catheter, successful placement can be achieved even in the presence of restricted mouth opening or altered upper-airway anatomy. This technique expands the armamentarium of noninvasive options available to the anesthesiologist and may improve safety in complex airway scenarios.

ABBREVIATIONS

PLMA= ProSeal Laryngeal Mask Airway

SAD= Supraglottic Airway Device

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