

# Video Laryngoscope Assisted Awake Nasal Intubation with Restricted Mouth Opening in an Operated Radical Neck Dissection Patient

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## ABSTRACT

Naso-Endotracheal Intubation (NEI) for anaesthesia in oral and maxillofacial surgeries are difficult in case of oral mass, micrognathia, restricted mouth opening, pathological anatomy of upper airway and restricted neck extension. This case report presents the clinical and anaesthetic management for a 46-year-old male patient recently operated for left buccal mucosa squamous cell carcinoma with restricted mouth opening of 1.5 cm, a big rent of 4×5 cm on left cheek and restricted neck extension and flexion scheduled for forehead flap surgery. Patient was intubated with non-channeled Video Laryngoscope (VLS) assisted awake nasal intubation.

**Keywords:** Airway blocks, Bougie, King vision video laryngoscope, Non-channeled blade

## CASE REPORT

A 46-year-old male patient was posted for left pectoralis major myocutaneous flap surgery under general anaesthesia. He was diagnosed for left buccal mucosa squamous cell carcinoma and radical neck dissection with deltoid flap was performed. He presented with restricted mouth opening of 1.5 cm [Table/Fig-1], extension and flexion of neck was restricted and a big rent of 4×5 cm [Table/Fig-2] on left cheek was there owing to failed graft.

After explaining the procedure, an informed written consent was obtained. Tab. alprazolam 0.5 mg was given the night before surgery. Patient was kept nil per orally overnight. On the day of surgery, pre-operative check-up was performed. A multipara monitor was attached to the patient and vitals were monitored. Pre-medication with inj. glycopyrrolate 0.4 mg, inj. ondansetron 4 mg and inj. midazolam 0.5 mg i.v., inj. ranitidine 50 mg i.v. through 18 G vein flow and inj. Ringer's lactate 500 mL were started. Patient was given oxygen through nasal prongs. Bilaterally superior laryngeal nerve block was given with 2 mL 1% inj. lignocaine and transtacheal recurrent laryngeal nerve block was given with 2% inj. lignocaine and topical nasal and oral spray was done with 10% inj. lignocaine. A non-channeled VLS was introduced [Table/Fig-3] in oral cavity to visualise vocal cords. Lignocaine 2% jelly was squeezed intranasally and also applied over bougie. Bougie was travelled through the nasopharynx into trachea via vocal cords under direct visualisation of VLS [Table/Fig-4]. A 7 mm internal diameter portex Endotracheal Tube (ETT) was railroaded over bougie, thus ETT was advanced further [Table/Fig-5]. Bilateral air entry was confirmed [Table/Fig-6]. Inj. propofol 120 mg, inj. atracurium 30 mg and inj. tramadol 50 mg i.v. was given and then ETT cuff was inflated. Patient was extubated after complete reversal of muscle relaxant keeping ventilating bougie in situ [Table/Fig-7].



[Table/Fig-1]: 1.5 cm mouth opening.  
[Table/Fig-2]: Rent 4×5 cm.  
[Table/Fig-3]: Insertion of VLS and Bougie. (Images from left to right)



[Table/Fig-4]: Passage of bougie through vocal cords.  
[Table/Fig-5]: Passage of ETT over bougie. (Images from left to right)



[Table/Fig-6]: Confirmation of bilateral air entry.  
[Table/Fig-7]: Extubation with ventilating bougie in situ. (Images from left to right)

## DISCUSSION

In patients with head and neck carcinoma, the three axis (oral-pharynx-tracheal) alignment is very difficult. Given the condition of limited mouth opening and non-availability of fiberoptic bronchoscope, a VLS is a better alternative. VLS gives good supraglottic view and allows better condition for intubation under direct visualisation of vocal cords. Most modern VLS require a mouth opening of >2.5 cm [1]. An interincisor distance of 20 mm is required to insert the narrow blades. A channeled blade is more suitable for bougie guided oral intubation with an interincisor distance of more than 2 cm, as the channeled blade's diameter is 18 mm<sup>2</sup>.

The King Vision has an anterior-posterior diameter of 13 mm in non-channeled blade. A King Vision VLS with number 3 non-channeled blade was used in the index case, for awake nasal endotracheal intubation. It was difficult to mask ventilate the patient due to a large rent on the cheek and given the restricted mouth opening it was a difficult intubation scenario, thus awake intubation was opted for.

A complete airway block was provided with smooth video laryngoscopy during the awake state. It is necessary that the patient understands and co-operate well during the procedure. VLSs are easier to use and need relatively less expertise in comparison to fiberoptic scope by inexperienced anaesthesiologists for awake intubation [2-5]. The indirect view of upper airway improves glottis visualisation, including in suspected or encountered difficult intubation [6].

A case report by Ali QE et al., also described the use of King Vision VLS in a restricted mouth opening patient of ankylosing spondylitis successfully with channeled blade while in the present case, non-channeled blade was used owing to less mouth opening with nasal guided intubation [7].

The range of extension was limited owing to the previous surgery therefore, VLS provided better visualisation without manipulating the head neck or the laryngoscope blade, which is also described in the case reported by Ali QE et al., [8]. A non-channeled blade facilitated nasotracheal intubation in comparison to McGrath MAC video laryngoscope in a randomised controlled trial for predicted difficult intubations [9]. Non-channeled blades are generally thinner, easier to insert and provide a good quality view to the vocal cords even in the case of significantly limited mouth opening [10].

## CONCLUSION(S)

It is possible to intubate a patient via nasal route with the help of non-channeled VLS and bougie in restricted mouth opening of less

than 1.5 cm and neck movement with good airway preparation in settings where flexible fiberoptic scope is not available.

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