

## Awake Retrograde Submental Intubation in a Patient with Pleomorphic Adenoma of Palate

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### Abstract

Retrograde intubation is one of many techniques that can be used in those cases where oral or nasal tracheal intubation may be extremely difficult or impossible. Retrograde intubation is a reliable and easily learned technique that offers an alternative to more invasive surgical solutions for securing the airway. Submental intubation provides intraoperative airway control, avoids use of oral and nasal route, with minimal complications. Submental intubation is an acceptable option, especially when long-term post-operative ventilation is not planned. We hereby report a case of a 55-year-old woman with a recurrent history of a pleomorphic adenoma of palate which required tumour excision under General Anaesthesia for which Awake Retrograde Submental Intubation was done.

**Keywords:** Anaesthesia; Pleomorphic Adenoma; Palatal Tumour; Retrograde; Submental intubation.

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### Case Report

Approximately 10% of Pleomorphic Adenomas occur in the minor salivary glands with the palate being the most common site. Pleomorphic adenomas account for the majority of palatal tumours; however, minor salivary gland tumours have a higher risk of malignancy compared to tumours of the major salivary glands, so appropriate diagnostic evaluation should be prompt.

We present a case of a 55-year-old woman with a recurrent history of a pleomorphic adenoma of palate since 23 years which required tumour excision under General Anaesthesia. Patient presents with

a history of swelling in the oral cavity with severe pain and difficulty in breathing on lying down since 2 months. In the Pre-Anaesthetic evaluation, there was no significant medical history and all routine and specific investigations were within normal limits. The airway examination revealed that the patient had mouth opening of 4cms (>two finger breadth), thyromental distance of 6cms (three finger breadth) and mallampati grading couldn't be elicited due to the tumour mass in the oral cavity.

Awake Retrograde Submental intubation was planned and Tracheostomy kit was kept ready in case of an urgent need to secure the airway. The procedure was explained in detail to the patient

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and an informed consent was obtained both for the procedure and for an Emergency Tracheostomy.

Airway block was planned, airway preparation was done on the night before and 2hrs before surgery. On arrival to the pre OP room, Baseline monitoring was done. Under Aseptic conditions, Airway block was performed to block the internal branch of the superior laryngeal nerve and the recurrent laryngeal nerve.

Cricothyroid membrane puncture was then performed with 18G needle and a guide wire used in central venous cannulation was advanced cephalad through the needle, the larynx and out of the mouth; the Flexometallic endotracheal tube (ETT) was railroaded over the guide wire into the trachea. Bilateral Air Entry was checked and confirmed equal on both sides.

Induction was then done with Inj.Propofol 2mg/kg and paralysed with Inj.Vecuronium 1mg/kg. A Throat pack was placed around the ET tube just above the level of vocal cords to prevent aspiration. A 1.5-cm skin crease incision was made in the left Submental region by the operating surgeon. Blunt dissection was performed to enter the oral cavity, and proper haemostasis was achieved. The pilot balloon of ET tube was directed towards and brought out of the Submental incision followed by the ET tube. The ETT cuff was inflated, and the breathing system was connected. After ensuring bilateral equal air entry, the ETT position was secured with skin sutures.

The 6hrs surgery proceeded uneventfully and maintenance was done with Vecuronium 0.2mg/kg and Isoflurane. The Emergency Cricothyroidotomy kit was kept ready before extubation in case of urgent airway control. After thorough oral suctioning, the ET tube was brought back to the oral cavity from the submental position and the submental incision was closed using two monofilament skin sutures, and sterile dressing was applied, now the throat pack was removed. The Neuro-muscular blockade was reversed with Inj. Neostigmine 0.05mg/kg + Inj. Glycopyrolate 0.5mg and was successfully extubated after extubation criteria is met. The patient was transferred to the Post-Anesthesia care unit. The submental incision healed with good cosmetic appearance and without specific complications.

## Conclusion

Henceforth, we conclude that management of nasopharyngeal/oral cavity tumours is one such challenge we all should be trained and emphasis

should be on importance of Retrograde Intubation and Submental Intubation in such anticipated difficult airway.

## Discussion

Difficult intubation is defined as inadequate visualization of the glottis and failed tracheal intubation as inability to insert a tracheal tube from the oropharynx into the trachea. The use of retrograde wire technique to assist in the management of difficult airway was first reported in 1981. Since then, modifications of this technique have included in the use of the fiberoptic bronchoscope to permit tracheal intubation under direct visual control.

This technique may be useful in trauma patients requiring cervical spine immobilization as well as in patients with facial trauma, tumours of oral cavity, trismus, ankylosis of the jaw and cervical spine, upper airway masses and bleeding. Flexible fiberoptic bronchoscope is the method of choice for coping with such difficult tracheal intubations. Although Retrograde Submental tracheal intubation has been described as a useful, safe, and effective airway management technique during maxillofacial surgery, especially to avoid a short-term tracheostomy and its attending morbidity. It's also better alternative in airway management in difficult airway conditions where there is no fiberoptic laryngoscope. Tracheostomy would have been an appropriate option to secure the airway under these circumstances if multistage reconstructive surgery was planned, with challenges of a difficult airway each time and significant risk of prolonged postoperative airway compromise resulting from soft tissue edema.

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