



## Nasogastric Tube as a Rescue Device for Difficult Nasal Intubation in Carcinoma Maxilla

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### Abstract

**Introduction:** Oro-facial tumors with compromised airway require nasotracheal intubation due to difficult oral intubation as well as for better surgical access. Best option is fiberoptic bronchoscopy but fragile tumor mass is a concern and chances of epistaxis and bleed from tumour mass or nasal mucosa are increased.

**Case Report:** We present a case of Ca maxilla where we encountered a difficulty in negotiating the endotracheal tube through the nasal passage.

**Conclusion:** Use of nasogastric tube as a guide for nasotracheal intubation ensures an atraumatic, smooth passage of an ETT through the nasal passage.

### Introduction

Oro-facial tumors with compromised airway require nasotracheal intubation due to difficult oral intubation as well as for better surgical access. Nasotracheal intubation in such cases is difficult because of oral swelling, decreased mouth opening and other associated deformities. Best option is fiberoptic bronchoscopy but fragile tumor mass is a concern and chances of epistaxis and bleed from tumour mass or nasal mucosa are increased. We present a case of Ca maxilla where we encountered a difficulty in negotiating the endotracheal tube through the nasal passage. Nasogastric tube acts as a soft flexible guide through the lower, relatively a vascular nasal pathway underneath the inferior turbinate.

### Case Report

A 62 year old female with carcinoma right maxilla was posted for partial maxillectomy, hemimandibulectomy and flap reconstruction.

Patient presented with pain in right side of mouth since 6 months and swelling on right side of mouth with decreased mouth opening since 2 months. Three cycles of chemotherapy were given after confirmation by biopsy report. No history of any other chronic illness was present.

On pre anesthetic evaluation Vitals were temperature=37.8C, pulse=84/min, RR=14/min, BP=156/90 mm/Hg. Airway assessment was limited due to restricted mouth opening. Systemic examination was normal. Routine blood tests, Chest X-Ray and ECG were WNL.

IDL could not be done, X-Ray STN was normal. CECT head and neck showed ill defined mass of size 47mm X 42mm X 34 mm in right cheek anterior to superior alveolar process with few enlarged lymph nodes in sub mandibular area. Awake fiber optic nasotracheal intubation was planned and informed written consent for same was taken. Pre-medication tab. alprazolam 0.25mg, tab. ranitidine 150mg and nasal preparation with Xylometazoline nasal drops was done on night before surgery as well as in the of morning of surgery.

Patient was brought to the operation theatre and routine monitors were attached. IV line was secured with 18G cannula and Inj. Ringers lactate drip was started. Patient was premedicated with Inj. Midazolam 1mg and Inj. Glycopyrrolate 0.2mg given IV.

Preparation for awake fibroptic intubation was done as under

- 1) Nasal preparation was done with Xylometazoline nasal drops(0.9%) and lignocaine spray (10%).
- 2) Oral topicalization done with lignocaine viscous gargles(10%).
- 3) Local Anaesthetic Blocks- Under all aseptic precautions B/L superior laryngeal nerve block was given using 1-2 ml of 1% lignocaine on each side. Trans-tracheal block was given using 2ml of 2% lignocaine.

Left nostril was chosen as trauma was right sided. We tried to place a slit nasopharyngeal airway (size 7.00 mm ID) to facilitate fiberscope insertion but it collapsed. A flexometallic ETT of ID 6.5mm was then directly inserted through the left nostril but this could not be negotiated, as resistance was felt. Keeping in mind that any nasal trauma at this point would worsen the situation, plan for nasogastric tube guided nasotracheal intubation was made. Nasogastric tube was inserted into reinforced flexometallic tube of size 7 mm with its tip protuding 15 cm from the distal end of tracheal tube (figure 1). This assembly was inserted into nasal cavity which resulted in smooth

navigation of flexometallic tube via nasopharynx. Nasogastric tube when put into left nostril could be negotiated with ease through the nasal passage into the nasopharynx and under its guidance reinforced flexometallic tube was advanced into trachea. Nasogastric tube was then removed. After confirming its position by capnography and auscultation, Inj. Propofol 140 mg and Inj. vecuronium 6mg IV was given and general anaesthesia was provided as per standard protocol and surgery commenced (figure 2). Rest of the procedure proceeded as planned. Both per-operative and post operative course were uneventful.



**Figure 1:** ETT railroaded on NGT- assembled together



**Figure 2:** Preoperative image of patient after nasotracheal Intubation achieved

### Discussion

Individually head and neck carcinoma, facial fractures, maxillary surgeries and general

anaesthesia can contribute to difficult nasal intubation. Patients with head and neck cancers or trauma present functional and anatomical obstacle to nasal intubation due to potential presence of tumor, distorted anatomy and soft tissue edema.<sup>1</sup>

The most common complication is epistaxis, although traumatic avulsion of structures within nasal fossa and nasopharynx and dissection of retropharyngeal mucosa may occur when a rigid tube tip or a sharp edged Murphys eye of nasal preformed tracheal tube passes through the narrow passages. Fiberoptic bronchoscopy is a feasible option in such patients, but it also requires training and has a learning curve.<sup>2</sup>

In our case awake fibroscopy was the best available option as mouth opening was restricted due to trauma. Initially fiberoptic bronchoscopy could not be performed because of excessive tumour growth and anatomical deformity. Use of too much force could cause trauma to the fragile tumour mass which was a huge concern as blood in airway could not only obscure the view of larynx making awake fiberoptic intubation difficult but also increase chances of aspiration of blood. Various studies are available in literature for atraumatic intubation like use of NGT, wendl tube, urethral catheter, esophageal stethoscope or red rubber tube.<sup>3-5</sup>

In our case nasotracheal intubation was the only option as oral cavity was inaccessible for intubation and NGT guided technique was advantageous because while a preformed tracheal tube passed through the nasopharynx, nasogastric tube acted as a guide for lower pathway (relatively avascular area). After retrieving the NGT, the tube was easily advanced through the laryngeal inlet with the help of a fiberoptic bronchoscope as further blind intubation could impinge on the laryngeal inlet or at arytenoids cartilage and could cause traumatic bleed.<sup>1</sup> Thus use of NG tube at this juncture to negotiate the ETT through the nasal passage into the nasopharynx proved to be a 'rescue measure', thus facilitating fibroscopic placement of ETT in a difficult airway situation.

## Conclusion

Use of nasogastric tube as a guide for nasotracheal intubation ensures an atraumatic, smooth passage of an ETT through the nasal passage. Its easy and economic availability makes us recommend it in difficult airway situations like orofacial tumors with restricted mouth opening.

## Consent

A written informed consent of the patient was taken for reporting this case.

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