Int. J Med. Pharm. Res. (P-ISSN: 2958-3675 | E-ISSN: 2958-3683)
Available on: https://ijmpr.in/

International Journal
of Medical and Pharmaceutical Research

CASE REPORT **OPEN ACCESS**

Airway Management of Patients Undergoing Vocal Cord Nodule Surgeries Using Microlaryngeal Tubes (MLT) - A Case Report

Dr. Meenaxi Dholey[1]*, Dr. Sushma Patidar[2]

[1]Head of the Department, Grade 1 DNB Teacher, Senior Consultant Anaesthesia, Pt. Madan Mohan Malviya Shatabdi Hospital, Govandi, Mumbai Maharashtra 400088, India
[2]Second Year, Department of Anaesthesia and Critical Care, Pt. Madan Mohan Malviya Shatabdi Hospital, Govandi, Mumbai Maharashtra 400088, India

OPEN ACCESS

***Corresponding Author**
Dr. Meenaxi Dholey

Head of the Department, Grade 1 DNB Teacher, Senior Consultant Anaesthesia, Pt. Madan Mohan Malviya Shatabdi Hospital, Govandi, Mumbai Maharashtra 400088, India

Received: 15-01-2025
Accepted: 14-02-2025
Available online: 18-02-2025

A B S T R A C T

***Introduction*:** A vocal cord nodule (Singer's or screamer's or preacher's nodes) is a common laryngeal benign lesion and also a common cause of hoarseness of voice in adults. A common space shared by Anesthesiologist in view of airway management and surgeons in view of excision or biopsy for vocal cord nodules. ***Objective*:** Describe the Airway management with advantages of Microlaryngeal Tracheal Tube in Vocal Cord Nodules. ***Method*:** A literature review was conducted using databases such as PubMed, Elsevier, and Google Scholar to identify relevant studies comparing Microlaryngeal Tracheal Tube with Portex Endotracheal Tube in Vocal Cord Nodule biopsy or excision. ***Result*:** We present a case of 63 years old male with Vocal Cord Nodule who underwentVocal Cord Nodule biopsy or excision under General Anesthesia using a Microlaryngeal Tracheal Tube for airway management. ***Conclusion*:** This case report highlights the superiority of Microlaryngeal Tracheal Tube (MLT) for airway management allowing better visibility and access to the surgical site.

Keywords: Airway management, Microlaryngeal Tracheal Tube, Vocal Cord Nodule.

INTRODUCTION

Vocal cord nodules are mostly benign in nature with various shapes, vascularity, and histological characteristics [1].Vocal cord nodules arise more frequently in children than adults, and rank second to inflammatory conditions for causing hoarseness of voice [2].

Management of the airway in such cases is challenging for an anaesthesiologist. They require detailed evaluation and careful planning to avoid life threatening complications. Multiple techniques such as bronchoscope or video laryngoscope- guided awake intubation, intubation with micro cuffed endotracheal tube, elective tracheostomy and tubeless techniques such as jet ventilation have been successfully used for the surgical excision of laryngeal tumors [3].

During microlaryngeal surgeries, a common space is shared by anaesthesiologist and surgeons. The tube has to be placed carefullyaround the lesion as space is required for proper vision, excision and hemostasis duringVocal cord surgeries, hence a microlaryngeal tracheal(MLT) is preferred over an Adult Portex Endotracheal tube.

The correct placement of aMLT tube is important and can make a difference in the outcome of the procedure [4].

Case History

A 63 years old male, ASA II average built, with moderate general condition presented with complaints ofthroat pain, and change of voice since 2-3 months.

He had no cough, cold, fever at the time of examination. On preanesthetic examination patient was found to be vitally stable.

He had history of Road traffic accident 40 years ago (No history of injury to head, chest, and abdomen). He had undergone bilateral lower limb amputation followed by prosthesis placement. He had history of humerus fracture - humerus plating was done for same.

He is a known case of Hypertension since one year, managed on Tab Amlodipine 5mg OD + Tab Losartan 50 mg OD.

On airway examination: mouth opening 3 finger breadth, Mallampatti class 2, he had heavy jaw with short neck (Figure 1)ET: 2 flightsTeeth: Normal (No loose tooth, No missing tooth) Neck movements: Normal.

Figure 1:

Systemic examination: was found to be normal; Pre - operative laboratory examination results were found to be within normal limit. ECG and chest X ray normal.

Patient was explained about the General Anaesthesia procedure, along with its pros and cons. Consent taken for anaesthesia with difficult ventilation & intubation consent.

Case Management

Adequate NBM confirmed, well informed and written consent checked, Vitals checked, pre-op nebulization with Budecort and Duoline done.

Patient was taken on Operative table, monitors attached, vitals checked and noted; Blood pressure = 130/78mmhg, Pulse rate= 78/ min, Spo2 = 99% on room air.

Procedure of General anaesthesia& intubation, extubation explained to the patient. Oxygen started via nasal prongs at 4 litres/ min. Patient was Pre medicated with inj Glycopyrrolate0.004mg/kg IV + inj Ondansetron0.08mg/kg IV + inj Midazolam 0.02 mg/kg IV + inj Pentazocine 0.5mg/kg IV.

Patient induced with inj Propofol 2mg/kg IV slowly in graded dose till loss of consciousness and centralisation of pupil, ventilation checked, ventilation was difficult due the heavy jaw, Gudel's airway was putafter size measurement allowing easy ventilation of the patient.

InjScoline was given as neuromuscular blocking agent (patient's serum potassium level was 4.1), Fasciculation seen, after 1 min of ventilation, under direct laryngoscope vision patient intubated with Microlaryngeal Tracheal Tube no = 5Black line of the tube was seen beyond the level of cords, circuit was attached to thetube & misting was seen.

On manual ventilation Bilateral chest rise seen, tube placement was confirmed with ETCO2 graph and on auscultation -air entry was bilaterally equal and clear following which tube was fixed.

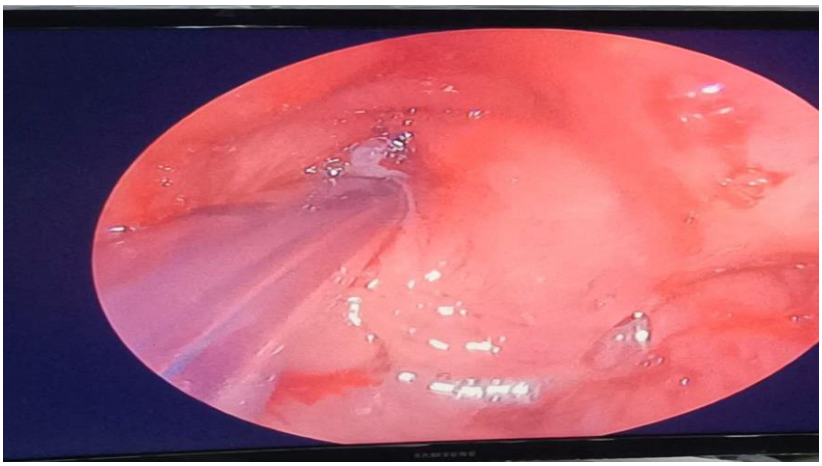

Figure 2:

Patient's was maintained on O2+ N2O + Sevoflurane + inj Atracurium intermittently. Patient tolerated the procedure well. Intraoperative period was uneventful. Patient was vitally &Hemodynamically stable post-operatively. Thorough Suction of oral cavity was done.

Patient's spontaneous ventilatory efforts were seen and reversal with Inj NEOSTIGMINE 3.0mg &Inj GLYCOPYRROLATE 0.4 mg Intravenous was given.

On seeing eye-opening,head lift for more than 5 seconds & active movements in all 4 limbs, patient was extubated and shifted to recovery room. Patient was observed in recovery room for 30 mins on & off O2 and shifted to ward.

DISCUSSION

Very few case reports are available on airway management of Vocal cord nodules. Mismanagement of such nodules during both airway management and surgical manipulation may cause severe life - threatening complications.

The most dangerous anticipated complication during airway management is bleeding, trauma or dislodgement of the nodule/mass, resulting in complete ventilation failure.

Considering the narrowing of laryngeal lumen secondary to the vocal cord nodule, we used a size 5 microlaryngeal tube (MLT) to avoid trauma, dislodgment & bleeding in the trachea. The advantage of using an MLT is that although they have a smaller diameter, adult length is retained, thereby making it suitable for adult nasal/oral intubation.

We found these MLT tubes to be superior to Adultportex endotracheal tubesfor airway management in vocal cord lesions in terms of surgical visualization, maintenance of adequate oxygenation and ventilation [5], especiallyfor patients whose airway has been narrowed to such an extent that a normal sized tracheal tube cannot be inserted. It's small diameter and longer length allows it to be used for intubation through a supraglottic airway device as well [6].

CONCLUSION

This case report describes a rare occurrence of a right true vocal cord nodule in a patient presenting with persistent hoarseness of voice.

This case report highlights the superiority of Microlaryngeal Tracheal Tube (MLT) for airway management allowing better visibility and access to the surgical site.

ABBREVIATIONS

MLTs	Microlaryngeal Tracheal Tube
ASA	American Society of Anaesthesiologist
MPC	Mallampati Classification
ET	Effort Tolerance
NBM	Nill By Mouth
IV	Intravenous

ETCO2	End Tidal CO2
OD	Once a day
ETT	Endotracheal Tube

REFERRANCE

1. Kour, A. P., & Singh, A. (2023). Large Vocal Cord Polyp and Anesthetic Considerations: A Case Report. *Apollo Medicine*, *20*(Suppl 2), S49-S51. DOI: 10.4103/am.am_141_22
2. Pannbacker, M. (1999). Treatment of vocal nodules: options and outcomes. *American Journal of Speech-Language Pathology*, *8*(3), 209-217. https://doi.org/10.1044/1058-0360.0803.209
3. Choudhary, J., Singh, A., & Chakraborty, S. (2024). Anesthetic management of a rare case of mobile vocal cord polyp causing dynamic airway obstruction: A case report. *Saudi J Anaesth*, *18*(4), 580-582. doi: 10.4103/sja.sja_229_24. Epub 2024 Oct 2. PMID: 39600440; PMCID: PMC11587953.
4. Gupta, A. (2011). Nasal intubation of microlaryngeal tracheal tube for vocal cord lesion surgery. *Journal of Laryngology and Voice, 1*(2), 75-76. doi: 10.4103/2230-9748.85069
5. Sarah, U., Raju, D., Parveen, S., &Kudpaje, A. (2024). Transoral Laser Microlaryngeal Surgery with MLT Tubes: A Retrospective Case Series. *Indian J Otolaryngol Head Neck Surg*, *76*(5), 3922-3929. doi: 10.1007/s12070-024-04743-3. Epub 2024 Jun 6. PMID: 39376353; PMCID: PMC11455777.
6. Dorsch, J. A., & Dorsch, S. E. (2007). Tracheal tubes. In: Dorsch, J. A., Dorsch, S. E. (Eds). Understanding Anesthesia Equipment, 5th edition. Philadelphia: Lippincott Williams & Wilkins; 2007.