

*Case Report*

## **Molar Approach Intubation: A Good Choice for Macroglossia**

Geeta Ahlawat<sup>1</sup>, Savita Saini<sup>2</sup>, Vineet Kumar<sup>3</sup>, Kirti Kshetrapal<sup>1</sup>, Mangal Ahlawat<sup>4</sup><sup>1</sup>Professor, <sup>2</sup>Sr. Professor, <sup>3</sup>PG Student, <sup>4</sup>Associate Professor,  
Department of Anaesthesia & Critical Care, Pt. B.D.Sharma PGIMS Rohtak, Haryana.

Corresponding Author: Vineet Kumar

*Received: 03/04/2016**Revised: 14/05/2016**Accepted: 22/05/2016*

### **ABSTRACT**

Macroglossia is enlargement of tongue that presents a challenge to anaesthesiologists, especially during laryngoscopy and endotracheal tube insertion. Difficult laryngoscopy is encountered more often in these cases as they encroach and physically occupy the oral cavity thus making glottis visualization difficult and thus difficult maneuvering of the endotracheal intubation. This difficulty can be overcome using a molar approach for laryngoscopy. We present such a case of a 6 year old child with 22 kg body weight posted for elective debulking. General anaesthesia was planned. Difficult intubation was anticipated and molar approach proved to be a rescuer in intubating the patient.

**Keywords:** Molar approach, difficult intubation, macroglossia.

### **INTRODUCTION**

Molar intubation is a technique of laryngoscopy that can be used for anticipated difficult intubation in cases where standard laryngoscopy technique is difficult due to presence of any intraoral mass that anatomically hampers laryngoscopy. The technique is reliable and rewarding. The cause of difficult laryngoscopy is multifactorial i.e prominent maxillary incisors, an increased volume of tongue remaining anterior to blade and anterior larynx. Anaesthetic management of patients with intraoral swellings is a great challenge to anaesthesiologists. Difficult laryngoscopy is encountered more often in these cases as they encroach and physically occupy the oral cavity and thus leading to difficult maneuvering of endotracheal tube. Molar approach intubation can be done with either Macintosh blade or Miller blade. Application of optimal external laryngeal manipulation (OELM) is also reported to

improve the laryngoscopic view <sup>[1]</sup> and so too the combination of the molar approach and OELM. <sup>[2]</sup> However good laryngoscopy view doesn't necessarily ensure successful intubation.

### **CASE REPORT**

A six year old child boy with body weight 22 kg presented with macroglossia since birth, occupying most of the oral cavity (fig.1). Patient was electively scheduled for debulking of the tongue. The patient had difficulty in swallowing and speaking due to the swelling. There was no other significant history. His vital parameters were within normal limits. His systemic examination revealed no abnormalities. Routine laboratory investigations were within normal limits. After explaining the procedure and taking informed written consent patient was taken to operation theatre. Once in the theatre, after attaching routine monitors patient was

preoxygenated with 100% oxygen and premedicated with Glycopyrrolate 0.1mg iv. Anesthesia was induced with titrated dose of injection of thiopentone i.v. After ensuring adequate ventilation of the lungs inj. Suxamethonium 50mg was given. Oral airway was helpful in ventilation. Tracheal intubation was facilitated by molar approach of laryngoscopy with size 3 Macintosh blade. A Macintosh no. 3 blade was inserted from the left corner of mouth at a point above the left molar. The tip of the blade was directed postero-medially along the groove between the tongue and the tonsil until the epiglottis and glottis are seen (fig2, 3). Before elevating the epiglottis, tip of the blade was kept in the midline of the vallecula and blade was kept above the ipsilateral molar teeth. OELM was done during intubation, which improved the glottis view. Placement of the size 5.5 mm I.D endotracheal tube was confirmed by auscultatory method. Muscle relaxation was maintained with Atracurium 0.5mgkg<sup>-1</sup>. Adequate analgesia was given. The intraoperative period was uneventful.

After surgery patient was reversed for neuromuscular blockade with Neostigmine 1mg and Glycopyrrolate 0.2mg iv. The tracheal tube was removed after complete reversal of neuromuscular blockade and adequate spontaneous respiration.



Fig 1: Child with macroglossia (pre-op)



Fig 2: Molar approach laryngoscopy



Fig 3: Endotracheal tube insertion following molar approach intubation

## DISCUSSION

Unexpected difficult laryngoscopy or intubation may be encountered even after thorough airway assessments. In laryngoscopy with molar approach the laryngoscope blade is inserted above the molars. This approach reduces the distance from the patients' teeth to the larynx and thus prevents intrusion of intraoral, maxillary structures into the line of vision. This approach also avoids a large volume of the tongue remaining anterior to the blade as compared to the midline approach. [3]

We had planned a molar approach in our case due to presence of macroglossia that would either hamper the Macintosh technique of laryngoscopy or the swelling would obscure our line of vision during laryngoscopy and intubation. We preferred

the Macintosh blade as we are more comfortable with it.

The lateral approach for laryngoscopy has been described under various nomenclatures.

Since it was first reported by Jackson who stressed the importance of keeping the laryngoscopy blade to the side of the tongue and called it the “paraglossal approach”.

Yamamoto et al [2] were the first researchers to describe left molar approach and the use of Macintosh blade for laryngoscopy and intubation by molar approach. They observed that the molar approach reduces the distance from patients teeth to the larynx and prevents intrusion of maxillary structures into the line of vision.

Bonfils et al used the term retromolar for this technique. [4] Others like Arai et al [5] and Crinquette et al [6] advocated keeping the blade above the molar and turning the head to the left.

It is recommended that OELM should be routinely applied especially for patients with difficult laryngoscopy. Application of OELM is reported to enhance the view by one grade in all patients and by two grades in most patients, [2] as it happened in our case.

## CONCLUSION

Molar intubation is useful in patients having an intraoral swelling where standard laryngoscopy is difficult and fibrescope is not available. In case of friable masses

prone to bleeding where vision can be obscured with fibreoptic scope, this technique is a useful alternative. If anaesthesiologist encounters an unexpected difficult laryngoscopy, switching over to the left molar approach with OELM using Macintosh blade provides a good option.

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How to cite this article: Ahlawat G, Saini S, Kumar V et al. Molar approach intubation: a good choice for macroglossia. Int J Health Sci Res. 2016; 6(6):428-430.

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