

# Airway Management Challenges In A Rare Case Of Posterior Pharyngeal Wall Schwannoma: A Case Report

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## I. Background

Difficult airway is a challenging condition for anaesthesiologists, especially when it coincides with pharyngeal masses. Schwannomas of different origins may distort the airway anatomy, making airway management difficult, compromise oxygenation and endangering the patient safety, tumors may lead to a “cannot intubate–cannot ventilate” situation as the tumor enlargement in the upper airway can cause obstruction and hindrance to the intubation procedure. This presents a unique challenge in anaesthesia management for excision. [1-2]

Effective airway management prioritizes careful assessment, proper preparation, proper positioning, preoxygenation, maintaining oxygenation, and reducing trauma from airway interventions. It is advised to minimize the number of airway interventions, with blind techniques like using a bougie or supraglottic airway devices now being replaced by video laryngoscopy or fiber-optic guided intubation. In the event of tracheal intubation failure, supraglottic airway devices should be used to ensure oxygenation while assessing the next steps. Second-generation devices are preferred due to their advantages and are strongly recommended. Although, there is literature on anesthesia management and awake intubation in cervical tumors, limited literature is available on anesthesia airway management of parapharyngeal space tumors.

In this report, we describe the successful anesthetic management of a parapharyngeal space tumor using a video laryngoscope.

## II. Case Report

A 37-year-old male patient with a mass on the posterior pharyngeal wall was scheduled for excision of the mass. Patient gave a history of dysphagia, on and off in the last 4 years. The dysphagia was more to solids than to liquids, and has progressively worsened over 4 years. The patient did not have complaints of hoarseness, stridor, snoring or tinnitus, and had no associated co-morbidities. There was no suggestive history of tuberculosis, malignancies or Von Recklinghausen's disease

Airway examination:

The patient had adequate neck mobility and mouth opening, with a Mallampatti grade II. Neck inspection was normal. A palpable swelling on either side of hyoid bone, measuring approximately 1x2 cm, firm in consistency, moving with deglutition. There was no palpable lymph nodes or other swellings.

Neck radiographs revealed a uniform opacification in the posterior pharyngeal region extending from C4-C6. (Figure1)



(Figure1: A Uniform Opacification In The Posterior Pharyngeal Region Extending From C4-C6)

An upper GI endoscopy revealed bulky, well-circumscribed posterior pharyngeal wall lesion with normal overlying mucosa, suspicious of a neurogenic tumour.(Figure 2)



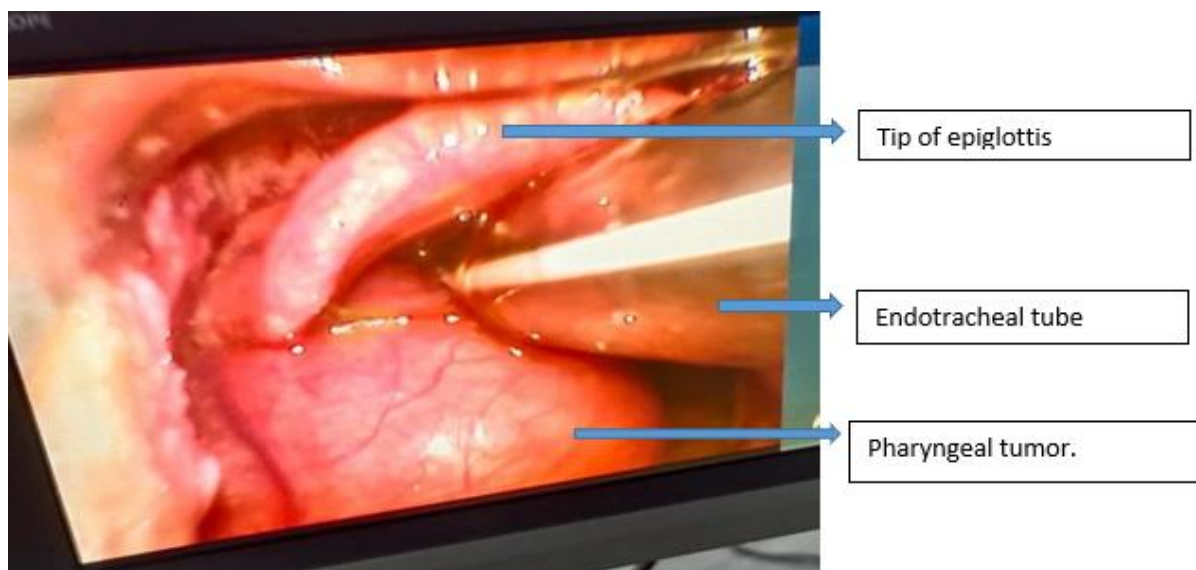
**(Figure 2: Upper GI endoscopy revealed bulky, well-circumscribed posterior pharyngeal wall lesion with normal overlying mucosa)**

Pre-anaesthetic check-up was unremarkable, with an ASA physical status I, Normal haemodynamic values and blood investigations within normal limits for his age and gender. Rest of the systemic examination was normal. One day prior to surgery written informed consent was taken and patient was counselled for various modes of airway management.

On the day of the procedure fasting status was confirmed. A difficult airway cart was prepared, including various sizes of direct laryngoscopes, bougie, stylet, suction apparatus, video laryngoscope and fiberoptic bronchoscope. The posterior part of the tongue, tonsillar fossa, and posterior pharynx were sprayed with 10% lignocaine spray to prepare the patient's airway. After recording baseline haemodynamic parameters, the patient was premedicated with IV Inj. Glycopyrolate 0.2mg, Inj. Midazolam 2mg, Inj. Fentanyl 100mcg. A check video laryngoscopy was performed using C-MAC video laryngoscope to determine the axis for intubation. Laryngeal view was adequate enough for passing the endotracheal tube. Following this, preoxygenation was done for 3 minutes. After checking the adequacy of ventilation, induction of anaesthesia was performed with IV Inj. Propofol 100 mg & Inj. Succinylcholine 100 mg. The patient was intubated with oral 6.0 mm ID cuffed Micro laryngeal endotracheal tube (MLT). The depth of anaesthesia was maintained with Oxygen, Air, Sevoflurane & IV intermittent boluses of Inj. Atracurium at 0.1mg/kg. The excision of the mass was done in toto, with the procedure lasting for 2.5 hours. Once the procedure was completed, an attempt at extubation was made. However, in view of airway oedema unresponsive to IV corticosteroids extubation was postponed and the MLT endotracheal tube was exchanged with Oral 7.0mm ID cuffed endotracheal tube using airway exchange catheter.

In the post-operative care unit patient was oxygenated via T-piece connected to endotracheal tube. The patient was re-evaluated for extubation on POD-1, which was deferred in view of persistent airway oedema. The patient was given trials of CPAP, and was successfully extubated on POD-2.

Histopathology of the mass was suggestive of a Schwannoma, and patient was discharged on POD-4. On follow-up after 1 month, patient had no complaints of dysphagia or stridor.



**(Figure3: check video laryngoscopy after intubated with MLT)**

### **III. Discussion**

Schwannoma, also known as neurilemmoma, is a benign, idiopathic encapsulated tumor that originates from the Schwann cells of the neural sheath of both sensory and motor peripheral nerves. These tumors are typically solitary, benign, and slow-growing with a smooth surface. They are often asymptomatic, though they can sometimes cause pain and discomfort. Multiple schwannomas may develop as part of Von Recklinghausen's disease or Schwannomatosis, a non-hereditary condition characterized by the presence of multiple schwannomas on the skin and in internal organs[3].

Schwannomas can occur at any age, although they are more commonly seen in individuals during their second and third decades of life, with no significant gender preference. These tumors often arise from the eighth cranial nerve. When located extracranially, about 25% of schwannomas are found in the head and neck region. Intraoral schwannomas are rare, making up just over 1% of benign tumors in the oral cavity, with the tongue being the most frequent site of occurrence. There are only 12 reported cases of this lesion..

The anaesthetic approach for the surgical removal of a schwannoma of pharynx is influenced by factors such as the tumor's location, size, and the chosen surgical technique, all of which must ensure adequate exposure of the tumor while considering any airway distortion caused by the tumor.

Rai V, Arora et al. They describe the anaesthetic management of a giant parapharyngeal space tumor, which posed a potential challenge for airway management and spontaneous breathing. In that case, awake intubation is effective in ensuring proper ventilation and intubation. [1]

Dabbagh A et al. They encountered an acutely enlarging thyroid mass that was compromising the airway. This huge neck mass precluded tracheostomy under local anaesthesia, and the patient could breathe only in the sitting position. There were a number of technical difficulties in performing the tracheostomy due to the enlarging mass. They recommended awake urgent intubation as the gold standard technique for patients who cannot tolerate the supine position. [4]

Shaikh SI et al. Highlighted the successful anaesthetic management of a 20-year-old female with Ludwig's angina, undergoing emergency drainage, by employing fiberoptic nasal intubation, and provided a brief overview of airway management strategies. [5]

Madhu Gupta et al. reported patient presented with an oropharyngeal mass nearly obstructing the hypopharynx, causing dyspnoea. History revealed relief of dyspnoea with tongue protrusion, which they confirmed by observing mass movement during airway examination. Anticipating difficulty with bag-mask ventilation under anaesthesia, they planned for awake nasal fiberoptic intubation as Plan A and tracheostomy as Plan B. During the procedure, the mass obstructed the view, but asking the patient to protrude her tongue allowed to visualize the airway and successfully navigate the scope. With resistance during tube insertion, the patient protruded her tongue again, allowing successful advancement after rotating the tube to 90 degrees. This highlights the critical role of a thorough history and examination, as without this information, they could have been unable to successfully perform the intubation [6]

Our case report presents management of a patient with posterior pharyngeal mass. From the collaborative preoperative evaluation and planning with the ENT surgeon, we anticipated case of a difficult airway and Ensured that difficult airway kit is organized, readily available and use of advanced laryngoscopy techniques. We had planned for awake check laryngoscopy with the C-MAC video laryngoscope before anaesthesia induction as Plan

A, with fiberoptic intubation as Plan B in case we were unable to visualize the epiglottis and vocal cords. However, the laryngeal view was adequate enough for passing the endotracheal tube during the check laryngoscopy, so we proceeded with general anesthesia after administering induction agents and successfully intubated the patient. our main focus of airway management was to securing airway, minimize the risk of damage, bleeding or displacement of the masses while maintaining airway patency.

#### **IV. Conclusion:**

This case highlights the complexities of managing a difficult airway associated with a pharyngeal mass. Effective preoperative assessment and the use of video laryngoscopy techniques were crucial in securing the airway safely. The patient's favourable outcome underscores the importance of thorough evaluation and preparation, as well as the need for vigilance in postoperative monitoring to address potential complications such as airway oedema.

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