

Classical Airway Assessment is Limited for Preoperative Recognition of Difficult Airway in Larynx Tumor: A Case*

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- ✓ Although preoperative recognition of difficult airway in the patients with larynx tumors is often possible, sometimes unexpected intubation difficulty can be seen without preoperative signs of difficult airway. We present a case report of failed intubation in an adult with larynx tumor without preoperative clinical findings of respiratory insufficiency and difficult airway. Some more specific analyses like computerized tomography (CT) or magnetic resonance imaging (MRI) can be more helpful for preoperative airway assessment of the patients with laryngeal mass.

Key words: failed intubation, larynx tumor, difficult airway

- ✓ **Larinks Tümöründe Preoperatif Güç Havayolu Tanısında Klasik Havayolu Değerlendirilmesi Yetersiz Kalabilir: Bir Olgu Bildirimi**

Larinks tümörlü hastalarda güç havayolu çoğu zaman preoperatif klinik değerlendirmelerle saptanabilmesine karşın, bu tip hastalarda preoperatif güç havayolu belirtileri olmadan beklenmedik entübasyon güçlüğü ile karşılaşılması da olası bir durumdur. Bu yazıda preoperatif solunum yetersizliği ve güç havayolu bulguları bulunmayan larinks tümörlü bir erişkinde gelişen başarısız entübasyon girişimini sunuyoruz. Bilgisayarlı Tomografi veya Manyetik Rezonans Görüntüleme gibi bazı özel incelemeler laringeal kitleli hastaların preoperatif değerlendirilmesinde daha yararlı olabilir.

Anahtar kelimeler: Başarısız entübasyon, larinks tümörü, güç havayolu

INTRODUCTION

Patients with head and neck tumors often need anesthesia for diagnostic biopsy or curable surgery. Airway management is essential preoperative anesthetic care of these patients. Preoperative recognition of difficult airway is very important for these patients. The difficult airway can be anticipated from preoperative clinical evaluation. Sometimes unexpected failed intubation can occur in patients with laryngeal abnormalities without preoperative clinical symptoms of difficult airway⁽¹⁾. We present a case of failed intubation in an adult with larynx tumor without clear clinical findings of respiratory insufficiency and difficult airway.

CASE REPORT

A-64-yr-old, 1.65 m, 55 kg male, ASA (American Society of Anesthesiologists) III anesthesia risk, was admitted for diagnostic rigid endoscopic laryngoscopy and biopsy because of suspicious malignant larynx tumor. Patient presented to the otolaryngology clinic with throat pain, swallowing difficulty and hoarseness. On examination, there were no clinical findings of respiratory insufficiency; only hoarseness without dyspnea was noted. Indirect laryngoscopic evaluation showed a mass, which prolapsed to laryngeal lumen. The mass was attached to ventricular band,

* TARK-2002 Kongresinde bildiri olarak sunulmuştur.

ventricle, vocal cord, arytenoids cartilage on the right side of larynx and laryngeal face of epiglottis. Right vocal cord movement was absent and the left one was restricted. Clinical diagnosis was transglottic laryngeal tumor. Laboratory data, including hematology and serum electrolytes were normal. On electrocardiographic evaluation negative T waves on derivation V1 and pathologic Q waves on derivation V2-5 was confirmed. Chest x-ray revealed suspicious mass on right hilus. Also, thorax CT revealed a 2 cm diameter nodule on the right upper zone of the lung.

Preoperative airway examination revealed a large oral opening (5,5 cm), adequate thyromental distance (7 cm) and a Mallampati Class II pharyngeal visualization. Pulse oximetry, indirect blood pressure measurement and ECG monitors were applied to the patient in the operating room. All measurements of patient were normal in the preoperative period. Topical 10% lidocaine with high-flow atomizer was administered to achieve topical analgesia of the upper airway. Incremental doses of propofol were given and when the adequate ventilation with facemask was assured, full doses of propofol (2,5 mg/kg) and succinylcholine 1,5 mg/kg were given intravenously. Rima glottis was not recognized in laryngoscopy because of big tumoral mass, only there was a small gap on left antero-lateral part of larynx, 6.0 mm inner diameter (id) laryngeal cuffed tube could not be advanced below the level of the mass because of resistance. At the second attempt,

5.0 mm id laryngeal cuffed tube was used but this was also unsuccessful. Another experienced anesthesiologist also tried repeatedly, but all attempts failed. The patient was ventilated with 100% oxygen via facemask between attempts and peripheral oxygen saturation was never below 80%. Laryngoscopic visualization was also done by an otolaryngologist and surgical team decided to do a tracheotomy because of the necessity of laryngectomy in any way. Then, size 3 LMA (Laryngeal mask airway) was settled for further ventilation and a tracheotomy was performed. After tracheotomy, rigid endoscopic laryngoscopy was performed for biopsy. Pathological examination of specimen revealed epidermoid carcinoma. One week later, total laryngectomy and radical neck dissection was performed. Examination of laryngeal specimen showed a rigid, hemisphere shaped, big tumoral mass on the right side of larynx (Figure).

DISCUSSION

Difficult endotracheal intubation is an expected situation for patients with larynx tumors. It's crucial to detect the potential airway obstructions in these patients. Preoperative airway assessment by the anesthesiologist needs to be thorough and should incorporate pertinent information from the patient's history, physical examination, previous anesthetic records, surgical plan, laboratory, and special studies⁽²⁾. Present case with larynx tumor didn't have any anesthetic experience before. The patients with head and neck cancer should be asked about problems with shortness of breath,

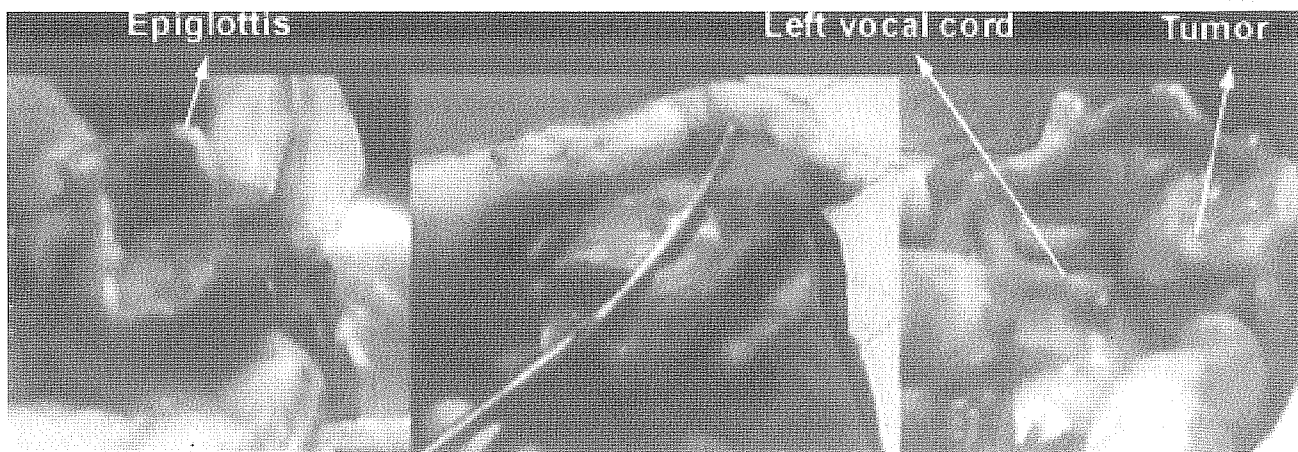


Figure. Tumoral mass on the right side of the larynx.

dyspnea, exercise intolerance, handling of secretion, and hoarseness. These problems except hoarseness were not found in this case. Hoarseness was characteristic of glottic, supraglottic or pharyngeal lesion⁽²⁾. In physical examination, there were no findings indicating respiratory insufficiency or difficult airway; patient could lie down in supine position with no sign of dyspnea, there was no intercostal or suprasternal retraction, mouth could open enough, thyromental distance and Mallampati score were normal.

If there is any suspicion of undetected disease, such as an airway tumor or if the impact of such a tumor or an infection on airway management is not clear, consultation should be obtained for indirect or fiberoptic laryngoscopy⁽³⁾. Indirect laryngoscopy made by an otolaryngologist showed laryngeal mass but didn't give clear findings about severe obstruction of upper airway. Most of laryngeal mass cases could be intubated easily. So, we didn't expect failed intubation. However, carefully anesthetic induction and preparation for difficult airway was made. After failed intubation attempts, size 3 LMA was settled for safe and easy ventilation⁽⁴⁾ and a tracheotomy was performed. Upper airway opening near the laryngeal mass was so narrow that 5 mm diameter rigid aspirator line could not be advanced to the trachea during direct laryngoscopy. At the end of the laryngectomy operation, examination of the specimen showed a big, rigid transglottic tumor on the right side of the larynx; left vestibular and vocal membranes were normal (Figure). This situation had caused distortion on the upper airway tract. We thought that distortion of upper airway might have been hindering intubation but permitting enough air transition. That's why; the patient did not suffer from respiratory insufficiency in preoperative period. The history and physical examination give very important clues in airway management of surgical patients with head and neck malignancies⁽²⁾. But, in this case history and physical examination didn't give significant clue for difficult airway.

Both CT and MRI can provide images with excellent detail of the larynx and hypopharynx⁽⁵⁾. Upper airway obstruction can

be demonstrated easily with MRI⁽⁶⁾. In this case preoperative laryngeal CT or MRI could be useful for predicting difficult airway management. Both imaging analyses could demonstrate the distortion of upper airway, which couldn't be noticed clinically, in this case. So, all the preparation need—for management of difficult airway could be made preoperatively or different strategies like awake intubation under local anesthesia could be applied.

CONCLUSION

In summary, preoperative clinical airway assessment can be inadequate for estimation of difficult airway in some patients with larynx tumor. MRI and CT can be more helpful for airway evaluation for the cases.

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