

Double Tongue Appearance of Congenital Neck Mass: Successful Management of Restricted Airway with Awake Fiberoptic Nasal Intubation

ABSTRACT

Epidermoid cysts are benign lesions that can cause mechanical airway obstruction if present in the neck and extend into the mouth floor. A 30-year-old male patient presented with a large, painless swelling in the anterior aspect of the neck and mouth floor. Surgical excision was planned under general anesthesia, and awake nasal fiberoptic intubation was the sole choice in view of restricted oral space secondary to swelling. This case report highlights the importance of planned awake nasal fiberoptic intubation and the challenges involved in the airway management of such rare cases.

Keywords: Cyst, dermoid, tongue



INTRODUCTION

Epidermoid cysts are benign lesions with cystic spaces lined by simple squamous epithelium, containing skin adnexa or tissues composed of elements of one germ layer, the ectoderm.¹ Head and neck cysts account for approximately 7% of all cases, often leading to diagnostic dilemmas due to common cystic lesions in this region.² They are typically found in the midline, near the areas of embryonic fusion of the head and neck, specifically around the eyes, nose dorsum, and anterior aspect of the neck.³ Epidermoid cysts are one of the rarest types of intraoral cysts, accounting for less than 0.01% of all such cysts. A cyst typically remains asymptomatic until it reaches a size large enough to cause mechanical obstruction, typically in the 15-35 age group, as observed in our patient.⁴ We report on a patient with congenital neck swelling that extended into the oral cavity, causing a double tongue appearance, where an awake nasal fiberoptic was successfully performed to secure the airway.

CASE PRESENTATION

An adult male patient presented with symptoms of change in voice for 2 years and significant difficulty swallowing more solids than liquids for 1 year due to a congenital neck swelling affecting the oral cavity and tongue base. The swelling gradually progressed to the present size (7 × 6.5 × 5.2 cm), causing upward displacement of the tongue and a classical double tongue appearance.

The patient had no significant medical or family history. His vital signs were within normal limits, and laboratory investigations were unremarkable except for increased hematocrit, possibly due to reduced oral intake. The extension of neck swelling into the oral cavity obstructed the view of the uvula and soft palate, resulting in modified Mallampati grade 4.

Anatomical findings revealed a large, disfigured cystic mass found in the midline floor of the mouth, extending inferiorly below the tongue, and palpable in the anterior aspect of the neck. The swelling was soft, non-tender, non-transilluminated, freely mobile, and compressive on palpation. An x-ray of the neck showed a centrally placed trachea, whereas a computed tomography scan revealed a large, hypodense cystic lesion showing peripheral enhancement in the sublingual space in the midline extending into the oral cavity. Fine needle aspiration cytology was performed, which showed keratinous lesions suggestive of epidermoid cysts.

Atif Khalid
Farah Nasreen
Manish Kumar

Department of Anaesthesia and
Critical Care, K N Medical College,
AMU Aligarh, India

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Corresponding author:
Atif Khalid

E-mail: atifkhalid2k11@gmail.com

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The patient was planned for awake fiberoptic nasal intubation due to limited oral space. However, the surgical team was kept ready for an emergency tracheostomy in case of failure. The procedure was explained to him in his language. Xylometazoline nasal drops were administered in the nostrils before surgery to achieve vasoconstriction of the mucosa. After psychological preparation, the patient was then taken inside the operation theater, and the standard monitors were attached preoperatively. Injections (inj.) dexmedetomidine 1 µg/kg and fentanyl 1 µg/kg, diluted with normal saline in 2.50 mL normal syringes, were given over 10 minutes. Nebulization with a 4% lignocaine solution was done, and a 10% lignocaine topical spray was applied 5 minutes before the procedure to reduce airway reactivity. Transtracheal block was performed using 0.5% lidocaine, but bilateral superior laryngeal nerve block was avoided due to the risk of rupture of the cyst. Para oxygenation of 15 liters per minute of oxygen by a nasal catheter throughout the procedure was administered, and simultaneously, oxygen saturation was monitored. Fiberoptic bronchoscopic-guided nasal intubation was done with a properly sized 7.0 mm ID armored cuffed endotracheal tube. After securing the airway, ventilation was checked and found to be adequate, and propofol and vecuronium were given. Maintenance was then done with oxygen-nitrous oxide (50:50) and isoflurane.

Surgical excision was performed externally (cervical approach) as it was a large lesion extending to the neck in the submandibular and submental regions. The patient had an uneventful intraoperative period, so he was extubated and subsequently transferred to the postoperative room for further care. The excised specimen, measuring 7 × 6.5 × 5.2 cm, was histologically examined and found to be an epidermoid cyst with a squamous epithelial lining and keratin debris.

Written informed consent was obtained from the patient for the publication of the case report.

DISCUSSION

Primary concerns in swellings of the oral cavity and tongue base include difficult airway management due to the presence of a oral mass, challenges in bag-mask ventilation, high chances of reactive airway, and dehydration due to poor oral intake.

Difficult airways are one of the leading causes of perioperative morbidity and mortality due to failed intubation and ventilation.⁵ Proper identification and preparation are crucial for preventing life-threatening airway complications. Practitioners should be familiar with techniques and have a clear plan for failures. An airway may become difficult due to a mass lesion above the

mylohyoid causing mechanical obstruction of the tongue, while the one below it protrudes into the chin in front of the neck.⁶

A plethora of airway gadgets and techniques has been described in the literature for the management of difficult airways, including video laryngoscopes, fiberoptic bronchoscopes, blind nasal intubation, and standby tracheostomies. Video laryngoscopy is an attractive option that is increasingly being used for both primary and alternative techniques for tracheal intubation. Awake tracheal intubation using video laryngoscopy has a high success rate.⁷ Insertion of the blades of direct and video laryngoscopes was not possible in our case due to the intraoral extension of the mass and the risk of rupture. Also, a straight-line view of the glottis was not possible in our case due to the mechanical obstruction of the swelling, while blind nasal intubation could be traumatic to the patient.⁸ So, we were left with awake nasal intubation as the sole choice and surgical tracheostomy as a standby plan B. Awake fiberoptic intubation has now become a well-established and safest technique in the management of both anticipated and unanticipated difficult airways scenario.⁹ In cases of long-standing neck mass, as in our case, fiberoptic intubation provides the added advantage of diagnosing tracheomalacia, which might require postoperative elective ventilation.

Dexmedetomidine alone, in different doses and combinations, has been used for sedation in awake fiberoptic intubation. A study by Mondal et al has suggested that a combination of dexmedetomidine and fentanyl provides better intubation conditions, sedation, stable hemodynamics, and less desaturation during awake fiberoptic intubation.¹⁰ In our patient, dexmedetomidine and fentanyl infusions provided excellent intubating conditions and stable hemodynamics throughout the intubation procedure. However, fiberoptic bronchoscopy requires extensive experience and can be challenging to visualize laryngeal structures in bloody or secretive airways.⁷

In conclusion, comprehensive preoperative evaluation and planning are necessary in the management of difficult airways secondary to the intraoral extension of neck swelling. The acquisition of skills in fiberoptic intubation and prioritizing it as the first choice for anticipated difficult airways are deemed essential.

Informed Consent: Written informed consent was obtained from the patient who agreed to take part in the study.

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MAIN POINTS

- Epidermoid cysts are rarely present as intraoral cysts.
- They often remain asymptomatic cysts until they cause mechanical obstruction.
- Successfully secured the airway with awake nasal fiberoptic intubation in a patient with congenital neck swelling extending into the oral cavity.

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