

Mandibular Tori Limiting Treatment of Carcinoma of the Upper Aerodigestive Tract

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ABSTRACT:

BACKGROUND: Mandibular tori are a rare cause of difficult direct visualization of the upper aerodigestive tract. In the setting of aerodigestive tract pathology necessitating direct visualization, removal of mandibular tori may be required to facilitate treatment.

METHODS: In the first case, large bilateral symmetric mandibular tori were removed to facilitate access to the anterior commissure and removal of a T1 glottic squamous cell carcinoma (SCC). In the second case, large bilateral mandibular tori were removed to access a markedly exophytic SCC in the right vallecula. Subsequently, the tumor was removed with robotic assistance with excellent exposure.

RESULTS: Both patients were free of recurrence at last follow-up.

CONCLUSION: Mandibular tori are an uncommon cause of difficult direct laryngoscopy. In situations that require direct visualization of the anterior commissure or base of tongue for diagnosis and management of lesions, surgical removal of the tori may be required as in the cases presented here.

KEYWORDS: mandibular tori, glottic carcinoma, oropharyngeal carcinoma, direct laryngoscopy, difficult visualization

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Introduction

Mandibular tori are exostoses with an estimated prevalence of 12% to 27%.^{1–3} Their cause is unclear but different possible etiologies have been suggested from developmental anomalies that are functional adaptations to forces of mastication⁴ to having a genetic predisposition. Mandibular tori are commonly found in the premolar and molar regions of the mandible⁵ and in the American population, higher prevalence is observed in males and African-Americans.³

Mandibular tori are a rare cause of difficult direct visualization of the upper aerodigestive tract.^{6,7} In the setting of aerodigestive tract pathology necessitating direct visualization, restricted access consequent to mandibular tori may require intervention prior to aerodigestive tract pathology treatment. We report the first cases of mandibular tori in the setting of glottic and base of tongue carcinoma limiting direct visualization with particular attention to management of the tori. Both patients provided written informed consent for patient information and images to be published.

Case 1

A 67-year-old male presented with 5 years of gradual dysphonia. Evaluation by an otolaryngologist found glottic abnormalities and operative excision was planned. However, direct laryngoscopy was difficult and only a biopsy was performed, the results which were concerning for malignancy.

Physical examination at presentation to our clinic revealed large bilateral symmetric mandibular tori and a round,

erythematous nodule at the anterior commissure. Computed tomography (CT) performed for evaluation of the laryngeal lesion confirmed the mandibular tori (Figure 1—Left). The patient was counseled and informed consent was obtained to remove of the tori if necessary.

In the operating room, attempts to visualize the upper border of the lesion with multiple laryngoscopes were limited. A burr was used to reduce the size of the tori to match the



Figure 1. (Left) 3-D reconstruction of CT Neck showing bilateral mandibular tori from case 1 (Right) 3-D reconstruction of CT Neck showing bilateral mandibular tori from case 2.



contour of the adjacent bone. Subsequently, the larynx and anterior commissure were visualized well and a CO₂ laser used to excise the nodule. Pathology revealed squamous cell carcinoma (SCC) with negative margins confirmed on frozen section and the patient was free of recurrence at 22 months.

Case 2

A 46-year-old male presented with 2 months of dysphagia, globus and a single self-limited episode of hemoptysis. Evaluation by an otolaryngologist revealed a right vallecular mass and the patient was referred for management. At our clinic, physical examination revealed large bilateral mandibular tori and a markedly exophytic mass in the right vallecula. CT exam with 3D reconstruction confirmed the bilateral mandibular tori (Figure 1—Right).

In the operating room, a biopsy was obtained showing SCC. It was noted that the inferior aspect of the lesion could not be exposed with multiple laryngoscopes, and that any future attempts at oncologic resection would require removal of the tori.

The patient discussed his treatment options with a multidisciplinary team and decided to pursue surgical resection with adjuvant radiotherapy. In the operating room, the tori were removed by utilizing an osteotome and burr. Subsequently, good exposure of the base of tongue was obtained and the tumor was removed with robotic assistance. The patient underwent adjuvant radiotherapy and was free of recurrence at 26 months.

Discussion

Mandibular tori are an uncommon cause of difficult direct laryngoscopy. Reports of mandibular tori of the mandible impeding direct visualization of the larynx during attempted intubation have been managed by utilizing other methods of laryngeal visualization such as video laryngoscopy⁸ or flexible fiberoptic endoscopy.⁹ Other groups have reported their experience with blind nasotracheal intubation¹⁰ or near blind endotracheal intubation.¹¹

If a patient is asymptomatic from their mandibular tori, they can be observed and not removed. The most common indications for surgical removal include the need for dental prosthetic treatment and as a site of harvest for cortical bone grafts.¹² However, in situations that require direct visualization of the anterior commissure or base of tongue for diagnosis and management lesions, indirect visualization of the larynx and base of tongue that bypass the tori may not suffice. Instead, surgical removal of the tori may be required and can provide the anatomic changes necessary for direct visualization and subsequent aerodigestive tract pathology management, as in the cases presented here.

Author Contributions

All authors contributed equally in the preparation of the article.

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