Lingual branch of the glossopharyngeal nerve and the tonsillar fossa:
A case report

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INTRODUCTION

Tonsillectomy is one of the most common otolaryngologic procedures, with an estimated 400,000 cases performed annually.

Severe pain, hemorrhage, and pulmonary complications are well-recognized as potential adverse outcomes. In recent years, taste dysfunction has been described in up to 21% of patients undergoing tonsillectomy.

The lingual branch of the glossopharyngeal nerve (LBGN), which carries sensation from the posterior third of the tongue, has been previously described in cadaveric studies to be in close proximity to the inferior pole of the tonsillar fossa.

We present the case of a child with achondroplasia who underwent tonsillectomy with findings of the LBGN within the tonsillar fossa.

CASE REPORT

Our patient is a 13 yo girl with achondroplasia and with height and weight less than 3rd percentile for her age.

She was referred to our medical center for management of her severe obstructive sleep apnea which had been diagnosed by an in-hospital polysomnogram performed at an outside facility - with an apnea-hypopnea index of 36 and a minimum oxygen saturation of 86% without evidence of central apnea.

On examination, she had 3+ tonsillar hypertrophy and was an obligate mouth breather. She was otherwise healthy except for a history of mild intermittent asthma.

The patient had no other otolaryngologic complaints. She had a recent normal audiogram. Given the above history and examination adenotonsillectomy was scheduled.

SURGERY

Prior to surgery, the patient’s neuroaxis had been cleared for general anesthesia. The patient was successfully intubated without event. Care was taken to avoid extension of the neck and possible cervical spinal cord or brain stem injury.

Adenoidectomy was performed using both curette and suction cautery to open a completely obstructed nasopharynx.

A total tonsillectomy was then performed in the extracapsular plane using the monopolar electrocautery at a setting of 10 Watts. The dissection was straightforward with minimal blood loss. Upon completion of the first side, closer examination demonstrated an unusual finding.

POSTOPERATIVE COURSE

Given the high risk of pulmonary complications in achondroplastics, the patient was closely monitored in the intensive care unit for 48 hrs. She was discharged home tolerating a liquid diet with pain controlled on post-operative day 2.

She has not noted any taste or sensory abnormalities.

Clinically the patient’s family notes improved sleep.

DISCUSSION

Two cadaveric studies have been performed in the last 10 yrs studying the glossopharyngeal nerve and the tonsillar fossa.

Ford et al. were interested in the anatomic distance between the glossopharyngeal nerve and the tonsillar fossa. In 20 specimens they demonstrated that the mean distance between the main trunk of the glossopharyngeal nerve and the posteroinferior tonsillar fossa was 10.7 mm and - of relevance to this report - between the LBGN and the posteroinferior tonsillar fossa was 6.5 mm, with a minimum of 5 mm.

Ohtsuka did not address the specific depth, variants which would leave the nerve at risk.

REFERENCES