

Case Report

Persistent Unilateral Throat Pain caused by Tongue-Base Cancer: Dentist be Aware of Negative ENT Evaluation!

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Glossopharyngeal squamous-cell carcinoma is, next to tonsillar carcinoma, the most common subtype of oropharyngeal cancer. We present a 49-year-old man with the chief complaint of left-sided jaw pain, radiating to the ear and throat. He had previously consulted two ENT surgeons, rendering negative examinations. He was referred by his dentist for evaluation of a Temporomandibular Disorder (TMD). Instead, left glossopharyngeal neuropathy was diagnosed with a 1-cm anterior cervical mass. He was referred to a head-and-neck oncological surgeon and was diagnosed with glossopharyngeal squamous-cell carcinoma with distant neck metastasis.

Keywords: Throat pain; Tongue-base cancer; Glossopharyngeal cancer; Oropharyngeal cancer; ENT evaluation; Human papilloma virus**Introduction**

Glossopharyngeal squamous-cell carcinoma is, next to tonsillar carcinoma, the most common subtype of oropharyngeal cancer. It occurs in the posterior one-third of the tongue and, hence, it is also referred to as tongue-base cancer. It has seen an increased occurrence in Caucasian males [1] and typically develops in the 4th and 5th decades of life [2]. Common presenting symptoms are a mass in the anterior neck (51%), sore throat (33%), and dysphagia (16%) [3]. Unfortunately, the majority of cases are not diagnosed until an advanced stage. The non-specific nature of the presenting symptoms and the limited visibility of the oropharynx are undoubtedly reasons for the diagnostic delay. Diagnostic imaging modalities, such as computerized tomography and magnetic resonance imaging, are helpful tools aiding in the diagnosis [4].

The increased occurrence of glossopharyngeal carcinoma is related to Human Papilloma Virus (HPV); tobacco-related glossopharyngeal carcinoma has decreased [5]. HPV-positive patients who are not habitual smokers or alcohol users have become the new demographic of glossopharyngeal carcinoma. Interestingly, HPV-positive patients have significantly better treatment outcomes than their HPV-negative counterparts [6].

In the present case, the patient was a non-smoker and exhibited persistent unilateral throat pain, with referred pain to the ear and dysphagia. The time it took to come to a diagnosis was at least 4 months, with two negative ENT evaluations. It is important for dentists to be aware of the symptoms and signs of glossopharyngeal carcinoma because they can develop rapidly and unexpectedly.

Case Presentation

A 49-year-old man was seen at Tufts Craniofacial Pain Center with the chief complaint of left-sided jaw pain, radiating to the ear and throat. The pain began 4 months prior to consultation as a sore throat on the left, elicited by swallowing. He had previously consulted two ENT surgeons, rendering negative examinations. Approximately

3 weeks after its onset, the pain progressed to the left jaw, extending to the left side of the throat and to the left ear. The pain was present continuously and was described as throbbing in nature. In addition to the jaw pain, he also reported pain in the left posterior neck and left shoulder. His review of systems was significant for obstructive sleep apnea and tension-type headache. He had never smoked and consumed, on average, one alcoholic beverage per day. In order to prevent teeth wear, his dentist had fabricated a mandibular mouth guard, which he used at night. The family history was positive for Temporomandibular Disorder (TMD) on the maternal side. His dentist subsequently referred him to our Center with the suspicion of TMD.

On examination, we elicited mild, bilateral tenderness upon palpation of the masseter, temporalis, trapezius, sternocleidomastoid, and medial pterygoid muscles as well as of the temporal tendons and temporomandibular joints. A 4-mm deflection of the chin to the right was observed upon opening of the mouth. The range of motion of the mouth was normal with an opening of 53 mm, right position of 7 mm, left position of 10 mm, and protrusion of 10 mm. Examination of the temporomandibular joints revealed an opening click on the right. Intraoral findings consisted of moderate facet wear with significant wear on the left lower 1st molar. The panoramic radiograph revealed moderate flattening of the articular surface of the right condyle. The patient was diagnosed with a myofascial pain syndrome of the left masticatory and cervical muscles with referred pain. He was treated with a hard, 1.5-mm maxillary orthotic appliance to be worn at night. In addition, we prescribed him a muscle relaxant.

After 2 weeks, he presented for his first follow-up visit and reported mild improvement of his symptoms. During the subsequent follow up visits, physical therapy and acupuncture were added, and he reported further improvement in his symptoms. Three months later, he woke up with severe throat pain and was brought in for examination by the neurologist on our team. His examination revealed mildly decreased hearing on the left with median Weber and decreased sensation over the left posterior tongue with incomplete

elevation of the left soft palate on phonation. Motor and sensory functions of the extremities as well as coordination were intact. His reflexes were normal and symmetrical. In addition, palpation of the anterior neck revealed a 1-cm mass on the left below the angle of the jaw. The mass was firm, mildly tender, and loose from the skin. Left glossopharyngeal neuropathy was diagnosed with suspicion of cancer and he was referred to a head-and-neck oncological surgeon.

Subsequent evaluation by the oncological surgeon revealed the submandibular triangles, jugular chains, and parotid and thyroid beds to be clear. Upon palpation, a 2-cm, mobile mass was found in the left jugulodigastric region as well as a 2-cm, firm nodule at the lateral base of the tongue. Computerized tomography showed a moderate mass in the left of the neck and the palpable mass in the left anterior neck. Fine-needle-aspiration biopsy of the neck mass confirmed the diagnosis of squamous-cell carcinoma on the left tongue base. He was diagnosed with glossopharyngeal squamous-cell carcinoma with distant neck metastasis for which he underwent a multi-month regimen of chemotherapy and radiation. He also underwent direct laryngoscopy for staging and esophageal dilation to aid swallowing.

Discussion

The present case emphasizes the importance of persistent unilateral throat pain with referred ear pain in the context of glossopharyngeal carcinoma. Overlap in symptoms between myofascial pain syndrome and glossopharyngeal carcinoma have contributed to the delay in diagnosis. Furthermore, the patient was evaluated by two ENT surgeons and a dentist before being referred for a TMD evaluation. Replication of pain during the examination of the masticatory and cervical muscles confirmed the diagnosis of the myofascial pain. The patient reported otalgia and sore throat, which are only two of the many symptoms consistent with a diagnosis of glossopharyngeal carcinoma. Other symptoms include dysphagia, globus sensation, dysarthria, hemoptysis, and weight loss.

Dentists should be aware of the overlapping symptoms and diagnostic tests for glossopharyngeal carcinoma so they can contribute to timely diagnosis and appropriate referral. There are multiple explanations for the diagnostic delay in patients with glossopharyngeal carcinoma. Jones et al. showed that the mean time frame for diagnosis of head and neck cancers is approximately 4.9 months [4,7]. Unilaterality and focal sites of pain are essential features that can aid in the diagnosis of glossopharyngeal carcinoma. In this case, physical examination from the dentist did not reveal any enlargement and the patient did not report any masses. A comprehensive history should be obtained from patients, especially related to tobacco and alcohol use. There is a well-known association

between tobacco use and cancer [8]. Our patient did not fall in this high-risk population because he denied tobacco use and consumed no more than one alcoholic beverage, on average, per day. However, with the decreasing global use of tobacco, there has been a steady increase in glossopharyngeal carcinoma linked to HPV infection, particularly type 16 [5,6].

Gillison et al. found that 62% of HPV-positive patients had tumors at the base of the tongue or in the tonsillar region [9]. The HPV-positive patients are increasingly difficult for physicians to identify because they usually have a negative history of tobacco or alcohol use. The present case illustrates the importance of interdisciplinary cooperation amongst health care providers. After being reviewed by primary, secondary, and tertiary-care physicians, it was not until an advanced stage reached by the disease that a diagnosis was made. Due to the quiet nature of glossopharyngeal carcinomas and the recent association with HPV-16 infection, it is important to recognize key symptom characteristics, such as persistence and unilaterality.

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