Case Report

A Suspected Palatine Tonsil Tumor Hides an Unrecognized Vagal Schwannoma in a 75-Year-Old Patient: A Case Report

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Received 8 March 2016; Accepted 15 March 2016

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Abstract Background. We discuss a particular case of apparent palatine tonsil cancer that was then shown to be vagal schwannoma. Only a few cases of palatine schwannoma have been discussed in the international literature. This case is the first in which a vagal schwannoma manifested itself as a palatine tonsil cancer. Case report. A 75-year-old man reported persistent dysphonia associated with dyspnea in a horizontal position with lateral left decubitus that had started four months prior in the absence of any apparent causes. After conducting clinical examinations and a biopsy, we initiated MRI and CT investigations prior to surgery. We identified the correct diagnosis of vagal schwannoma. After surgery, the patient was resolved completely of his symptomatology, and he retained his nerve function. Conclusion. In some cases, the history and the age of patients can render diagnoses incorrect. We emphasize that rare diseases can mimic other pathologies.

Keywords oral cancer; dysphonia; schwannoma; palatine tonsil

1. Introduction
Tonsil cancer, a cancer that occurs in one of three types, represents 2% of all cancer cases [1]. It most commonly occurs in the palatine tonsils, and it is more common in males approximately 55–60 years old [2]. The most common malignant tumor of the palatine tonsils is lymphoma, followed by squamous cell carcinoma (SCC) [1,2]. The incidence of palatine tonsil cancer is between 20 years in the United States and England [3]. Smoking with a percentage of 93% is the most common risk factor for SSCs of the tonsils [3]. Alcohol is also a risk factor; the combination of smoking and alcohol use presents an even greater risk of developing palatine tonsil cancer than using either substance alone [3]. The clinical symptoms and signs of tonsil cancer include pain (especially in the ears), difficulties in swallowing, tonsil asymmetry, palpable firmness or visible lesions in the tonsils, neck mass, and unexplained weight loss. In the early stages of the disease, there are no symptoms. Schwannomas, as opposed to SSC, are benign, slow-growing neoplasms that can arise from any peripheral spinal or cranial nerve that includes Schwann cells. Schwannomas are less common than neurofibromas and make up approximately 5% of all benign soft-tissue tumors [4,5]. Schwannomas are typically asymptomatic and become symptomatic when the mass involves adjacent structures that may cause the presence of pain or paresthesia [6]. Symptoms are nonspecific and are related to the structure involved in the growth of the tumor. We can accordingly define schwannoma symptoms as indirect. Approximately 25% of extracranial schwannomas are located in the head and neck [5]. We present here a case of a suspected palatine tonsil tumor hiding a parapharyngeal schwannoma.

2. Case report
A 75-year-old man came to our attention for persistent dysphonia associated with dyspnea in a horizontal position with lateral left decubitus that had started four months prior in the absence of any apparent causes. The patient did not present dysphagia or coughing. He was a former smoker who had smoked more than 20 cigarettes for day for 30 years. He occasionally drank alcohol, but not more than one glass of it at a time. He had no history or Herpes Zoster virus infection or Varicella Zoster virus.

Upon otolaryngological examination, an ulcerative lesion 1.5–2 cm was found that covered the patient’s right tonsil in its oral portion (Figure 1); this lesion was limited to the tonsil without involving the surrounding structure. No cough was present during neck palpation, and we found a bilateral lymphadenopathy unfixed on the surrounding planes of the neck; it was not painful upon palpation, and the lymph node was larger than 3 cm in the right neck and less than 3 cm in size in the left one. We suspected a T2N2Mx tonsil cancer, and we performed a tonsil biopsy under local anesthesia without touching the lymph node.

A histopathological examination revealed only diffuse inflammation with the rich presence of neutrophils and lymphocytes in the active phase. We treated the patient with systemic antibiotic therapy for 15 days. However, when he came back for a followup with the same symptoms, we decided to conduct an additional investigation. We
On the right palatine tonsil, we found a superficial granular ulcer (approximately 2 cm in size) on the tonsillar surface; there was no invasion of neighboring structures. We requested a CT with an angiographic study because we hypothesized that the patient might have a vascular neck tumor. The results of the angiography with a spiral CT of the epiaortic vessels revealed “a 4 cm solid and expansive mass corresponding to the right posterolateral wall of oropharynx. This ovoidal mass appeared widely necrotic with a posterior extension localized near right the carotid forking; the mass divided the internal carotid from the external one. The internal carotid appeared remarkably displaced in medial position and the external one was laterally displaced. The mass resulted in a compression of internal jugular vein, which caused a caliber reduction of 50%.” The results of the CT scan did not reveal any vascular connection of the mass.

In order to better understand the problem prior to conducting surgery, we requested MRI data. These data revealed that “in the right posterior wall of the oropharynx, a 4 cm solid and expansive mass that was hypointense on T1-weighted images and hyperintense on T2-weighted image exhibited a homogenous enhance with contrast. On coronal T2-weighted images, the mass presented a vascular peduncle exiting from the external right carotid and appearing to be in contact with the vagal nerve. The vessel displacement was the same as noted in the TC data.” We decided to remove the mass surgically after being told that the patient had refused other treatment and was adopting a “wait and see” approach. The patient had a cardiological consultation prior to the surgery that revealed a nonspecific alteration of AV parameters at ECG. We removed the mass using a transcervical approach, prepared the external carotid, and isolated the spinal and hypoglossal nerve. After these passages, we removed the mass with its capsule in one single stage. Since the mass had a peduncle starting from the external carotid artery and had adhered to the vagal nerve, we could easily detach it in a manner that allowed the vagal nerve to remain intact. A macroscopic histological examination (Figure 2) revealed “a nodular mass, off-white in color with a tense elastic consistency. It had a maximum diameter of 4 cm with at cutting variegated area that was white and brownish.” Microscopically, the mass appeared as a schwannoma with arranged areas A and B according to Antoni with a regressive stroma and a vascular phenotype. The demission diagnosis was schwannoma of the X cranial nerve (vagus) of right mandible’s angle. At the one-month followup, the patient exhibited persistent dysphonia with twice tonal voice as monolateral vocal paralysis symptom; he was free of coughing and dysphagia. An endoscopy study revealed a right vocal fold in the paramedian position (abductor paralysis) with larynx rotation on the right site. The patient received voice rehabilitation, and his dysphonia was resolved in four months. No recurrence and no other symptoms were identified at the one-year followup.

3. Discussion

The discovery of vagal schwannoma is a rare find. The patient’s history of being a former smoker and his advanced age suggested that his symptomatology was more indicative of an oral cancer than a schwannoma. The tonsil ulceration conducted us in a wrong way in our first diagnosis, but fortunately our patient returned, and we were able to discover his real pathology. Schwannoma is a rare cancer that represents 5% of all benign soft tumors. Vagal schwannoma is one of the rarest head and neck schwannoma. This tumor has a predilection for the head and...
neck region and is generally asymptomatic except in cases of compression of originating or adjacent nerves causing pain and paresthesia [7]. Tumors associated with the 10th cranial nerve can cause cough, dyspnea, and hoarseness [7]. Only in very rare cases does real dysphonia result; syncopal events [8] and Horner syndrome are also rare. We believe that the AV alteration in the ECG results of our patient may be related to the presence of a vagal schwannoma. This tumor typically occurs in individuals between the third and fifth decades of life [7]. Our patient was 75 years old and presented dysphonia and dyspnea only in a horizontal position; these observations can also be consistent with oral cancer. It is important to consider differential diagnoses in case such as this one to identify what is necessary to do and in what way to do it. We first thought of tonsil cancer, but the histology of the biopsy rendered our hypothesis false. We also thought of a carotid malformation or a glomus vagal tumor. Both of these tumors are intensely enhanced on both CT and MR images and reveal a characteristic “salt and pepper” appearance on enhanced T1-weighted MR images because of flow voids frequently noted with mass [5]. We found that the mass was hyperintense and solid without a “salt and pepper” appearance. Gilmer-Hill and Kline have described MRI appearance of a vagal nerve sheath tumor as being usually well-circumscribed [6]; the mass juts into the internal jugular vein and sometimes obliterates it. We found the same results in the angio CT of our patient and in the MRI as well. In light of the CT and MRI results, we excluded diagnoses that involved a head or neck mass (e.g., salivary gland tumors, carcinomatous metastasis, lipoma, lymphomas or lymphadenopathy). Other important information necessary to make a correct diagnosis is the typical effect of vagal schwannoma on the vessels; it tends to separate internal and external carotid arteries from the jugular vein and to displace the internal carotid artery anteriorly, as was observed in our patient. Today, preoperative MRI and CT scans are imperative for diagnosis, classification of tumors and planning the best surgical technique. It is important to completely remove the mass to avoid recurrence; at the same time, it is important to preserve nerve integrity. Preserving nerve integrity involves opening the capsule enucleating the mass in the first passage and then removing the rest of the capsule attached to the vagal nerve [9]. In our case, we removed the tumor with its capsule at the same time because the dissection plains were very clear and these simplified the tumor dissection. During surgical dissection, it is very important to note cardiac and hemodynamic parameters to avoid complications related to vagal nerve manipulation [10].

4. Conclusion

We want to emphasize the importance of diagnosis even in apparently easy cases. In our patient, the schwannoma mass in the parapharyngeal space pushed the tonsil into the oral cavity and resulted in apparent hypertrophy of this organ. The lesion on the bottom of palatine tonsil may be switched for tonsil cancer in an incorrect diagnosis. Even if a schwannoma is a benign tumor, its complications (dyspnea and ECG alterations) should ensure that it is always treated like other tumors.

Conflict of interest The author declares that there is no conflict of interest.

References