Case Report

Supraglottic paraganglioma originated from superior laryngeal nerve

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Abstract Neurogenic tumors, especially paraganglioma of larynx, are rare. In this article, we present a 64-year-old woman who complained of intermittent dysphagia to solid foods. Further evaluation revealed a supraglottic paraganglioma and she was treated successfully by total excision of tumor.

Key Words: Carotid body tumor, laryngeal nerves, paraganglioma

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INTRODUCTION

Neuroendocrine tumors of larynx are divided into epithelial (carcinomas) and neural type lesions (paragangliomas).[1] These types can overlap clinically and histologically. So, recently, they have been categorized into five tumor types: Typical carcinoid, atypical carcinoid, small cell neuroendocrine carcinoma, large cell neuroendocrine carcinoma, and paraganglioma.[2]

Paraganglioma is among neuroendocrine tumors and accounts for 0.012% of all tumors.[3] This tumor specially originates from parasympathetic nervous system and is predominant in females. The most common site of laryngeal paraganglioma is supraglottis; and it presents with dysphonia, hemoptysia, and airway compromise.[4]

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Computed tomography (CT) and/or magnetic resonance imaging (MRI) can reveal vascularity of the lesion. Preoperative angiography and possible embolization is helpful before surgical intervention. Immunohistochemical staining establishes diagnosis of paraganglioma from other neuroendocrine tumors.[5]

In this article, we describe a very rare presentation of paraganglioma in supraglottis.

CASE REPORT

A 64-year-old woman presented to our clinic with intermittent dysphagia to solid foods and dyspnea on effort from 2 months. She had history of goiter and gastroesophageal reflux; and was treated with Levothyroxin and Omeprazole.

Indirect laryngoscopy revealed a left mass lesion at the level of supraglottis. Direct laryngoscopy and biopsy of mass was done. Biopsy revealed polypoid tissue lined by stratified squamous epithelium; acanthosis

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was seen; Exocytosis of lymphocytes and neutrophils in surface epithelium was present. The underlying stroma was edematous and had congested vessels. No evidence of malignancy was seen.

In neck sonography, a solid hypoechoic hypervascular mass (34 × 27 mm) was seen in the left paramedian, between left common carotid artery and larynx. There were two hypoechoic thyroid nodules (7 mm diameter in inferior pole and 4 mm in superior pole).

Spiral neck CT scan with contrast revealed a large hypervascular mass which extended from epiglottis to the left vocal cord. It filled the left pyriform sinus, and narrowed airway tract with erosion to superior part of thyroid cartilage [Figure 1].

Biopsy from intraluminal space of hypopharynx was not diagnostic, so excision biopsy of mass was done.

With classic neck incision and exploration of carotid artery and vagus nerve, we found the tumor originated from superior laryngeal nerve, extending to supraglottic area. With preservation of superior laryngeal nerve, the tumor was dissected from supraglottic mucosa and excised completely. Because of edema of airway, prophylactic tracheostomy was done. Three days after the surgery, tracheostomy removed. Microscopic examination revealed the tumor as carotid body tumor (paraganglioma).

After surgery, the patient suffered from dysphonia as a result of superior laryngeal nerve paresis that improved 3 months later.

DISCUSSION

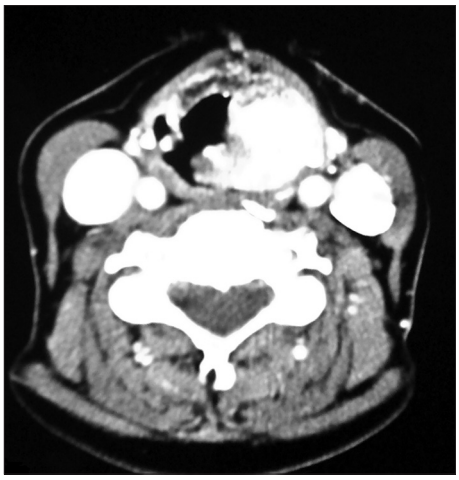

Figure 1: Axial CT scan of neck revealed hyperdense left pyriform sinus mass and narrowed airway tract, with erosion to superior part of thyroid cartilage

Only 10% of paragangliomas have extra-adrenal localization and only about 0.33% of them localize in head and neck. Typically they are benign tumors, and only 19% of cases may be potentially malignant. Neck paragangliomas are located close to carotid artery bifurcation, jugular bulb, and along the course of vagus nerve. They are very rare in larynx.[3]

This tumor presents by different manifestations; mainly there is a slow-growing, painless, asymptomatic mass with compressive effect on the surrounding structures. Auscultation may reveal a carotid pulse, bruit, or thrill.[6,7] It is more likely in females of age between 50 and 70 years.[8]

We present a supraglottic involvement of carotid body tumor, which is a very rare site for this tumor. Over 83 patients have been described in the literature.[9]

Diagnosis of this tumor is made by digital subtraction angiography (DSA) or Color Doppler sonography very well.[6]

This benign tumor is treated by complete surgical excision. As the risk of bleeding is high in this tumor, some authors suggest the external approach for tumor removal;[10] for example, lateral thyrotomy, lateral pharyngotomy, or laryngofissure technique.[11] If the tumor size is small, it can be excised with direct laryngoscopy and endoscopically.[12] Laser-assisted microlaryngoscopy is described for excision of large supraglottic paraganglioma as well.[13]

In conclusion, in patient with hypervascular neck mass, carotid body tumor should be considered, although supraglottis is its unusual location, and fine-needle aspiration should be done very cautiously to prevent massive hemorrhage. High clinical suspicion is mandatory to diagnose the tumor, even if nondiagnostic biopsy has been done.

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