Case report

Laryngeal paraganglioma

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Abstract:

Paragangliomas of the head and neck are rare especially in larynx. A 36 year old female patient presented with a history of progressive voice change and difficulty of swallowing for 6 months. During endoscopic examinations smooth surfaced mass on Left supraglottic region, was noted. Tumour was excised through transcervical excision. Histology and immunohistochemistry of the tumour revealed that, it was paraganglioma.

Key words: paragangliomas, larynx

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Introduction

Paragangliomas (PGLs) are neoplasms of neural crest origin. PGLs are rare in head and neck region. Even though difficult to estimate the exact incidence of head and neck PGLs, they represent <0.5% of all head and neck tumours. They could be originated from the carotid body, tympanic, jugular or vagal paraganglia¹.

Case report

A 36-year-old female patient presented to the local hospital with a history of progressive voice change for 6 months. It was associated with difficulty of swallowing, but she did not have shortness of breath or throat pain. A smooth surfaced mass on Left supraglottic region, which was obscuring the visualization of the true vocal fold was noticed during endoscopic examination (Fig: 1). CT scan revealed avidly enhancing mass lesion (size 1.3×1.7×2.4cm) in the left side of the larynx, located between the epiglottis and vocal cord. Microlaryngoscopy and biopsy were abandoned as tumour was vascular with a potential to bleed. The condition was explained to the patient. The tumour was excised through transcervical excision and lateral laryngotomy. Patient had an uneventful recovery and relieved of her problems. Histology and immunohistochemistry of the tumour revealed that, it was paraganglioma.

Figure 1: Arrow showing smooth left sided supraglottic mass

Discussion

PGLs in the head and neck uncommonly involve the larynx². Overall, a 3:1 Female predominance is observed¹.

The larynx contains two sets of normal paraganglia and paragangliomas. They are thought to arise from either the superior or inferior part of larynx². The laryngeal paragangliomas found in the false vocal fold is called glomus laryngicum superior. It is called glomus laryngicum inferior when it is found in the paraglottic space close to the cricoid cartilage laterally³. Blanchard and Saunders reported the first case of a laryngeal paraganglioma in 1955.

PGLs present as submucosal painless masses that become symptomatic when they exceed a critical size. At this instant the patient developed hoarseness of voice followed by dysphagia.

Differential diagnosis of PGLs includes laryngoceles, cysts, lymphoma, lipomas, neural sheath tumours, other neuroendocrine tumours, hemangiopericytoma, and Teflon granulomas³. Cervical lymphadenopathy is not found in laryngeal paragangliomas and malignant chance is very rare.

Most of these lesions share certain characteristics. They are often well encapsulated, lateral to the quadrangular membrane and rarely have luminal mucosal involvement. Therefore, it can be dissected from surrounding tissues easily. Because of these characters their removal becomes easier³.

A contrast computed tomography or magnetic resonance imaging scan shows a solid, hypervascular mass and due to flow voids that creates a classic “salt-and-pepper” appearance.

Biopsy of these lesions must be trans mucosal. But biopsy of these suspected lesions through direct laryngoscopy need to be avoided. Paragangliomas are highly vascular masses, hence control of bleeding could be challenging through a laryngoscope. It also causes scarring of mucosa on the surface of the paraganglioma, which increases the difficulty of tumour removal through any external approach. Similar to other paragangliomas, the diagnosis can be reached without biopsy³. Diagnosis mostly are dependent on histopathologic examination followed by immunohistochemistry².

Our patient presented with the typical features of PGLs such as voice changes, difficulty of swallowing and associated submucosal supraglottic mass. Micro laryngoscopic trans mucosal biopsy of this patient was abandoned because of bleeding.

The recognized treatment of laryngeal paragangliomas is surgery. Transoral laryngoscopic and external Transcervical lateral laryngotomy approaches are the 2 surgical approaches to excise laryngeal paragangliomas. The chance for lateral laryngotomy and possible tracheotomy or prolonged intubation should be included into the consent for the surgery.

Postoperatively the patient should be advised to avoid activities, which increases the supraglottic pressures such as balloon blowing or playing wind instruments. Observing the patient's swallowing for the first time following surgery is helpful to determine the degree of dysphagia.

External approach of excision was selected to our patient as it provides greater exposure, better access to laryngeal anatomy and control of bleeding. Patient underwent water soluble contrast study before commencing oral feeding to exclude aspiration/leak.

Conclusion

Even though laryngeal paragangliomas is a rare tumour it should be considered as one of the differential diagnoses when a patient presented with a submucosal laryngeal mass associated with voice change.

References

1. Kotsis T., Christoforou P., Vagal Paraganglioma: Surgical Removal with Superior Laryngeal Nerve Preservation. *Vascular Specialist International*: 2019 (June); 35(2)
<https://doi.org/10.5758/vsi.2019.35.2.105>. PMID:31297361 PMCID:PMC6609016
2. Binesh F., Dadgarnia MH., Khaksar Y., Mirvakili A.. Laryngeal Paraganglioma: A Diagnostic Challenge. *Case Report | Iran J Pathol*. 2015; 10(4); 322-325
3. Myssiorek D., Treatment of laryngeal paraganglioma. *Operative Techniques in Otolaryngology*. 2016;27;36-40 <https://doi.org/10.1016/j.otot.2015.12.002>