

Glomus Tumor of the Larynx: A Rare Synchronous Paraganglioma in a Patient with Bilateral Carotid Body Tumor Detected on ⁶⁸Ga-DOTANOC PET/CT

Abstract

Paragangliomas are neoplasms arising from extra-adrenal chromaffin tissue. They frequently cause symptoms by overproduction of catecholamines with known predilection to multicentricity. We describe the case of a patient with bilateral carotid body tumor who underwent a baseline ⁶⁸Ga labeled [1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid]-1-NaI3-Octreotide (⁶⁸Ga- DOTANOC) positron emission tomography/computed tomography (PET/CT) imaging for staging. Along with bilateral carotid body tumor, a tracer avid focus noted in anterior commissure of the larynx, which on subsequent histopathological examination turned out to be glomus tumor of the larynx.

Keywords: ⁶⁸Ga-DOTANOC, glomus tumor, paragangliomas, PET-CT

A 33-year-old patient presented with bilateral neck swelling progressively increasing in size over a period of 6 months. Based on the physical examination, a preliminary diagnosis of bilateral carotid body tumor was made. Twenty-four hour urinary catecholamine estimation was within normal limit (metanephrine: 60 mcg/24 h, norepinephrine: 50 mcg/24 h, normetanephrine: 200 mcg/24 h, VMA: 5 mg/24 h). He was referred for further evaluation with ⁶⁸Gallium 1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid-1-NaI3-Octreotide (⁶⁸Ga-DOTANOC) positron emission tomography/computed tomography (PET/CT). A contrast-enhanced CT fused with PET was performed which revealed DOTANOC avid hyperenhancing soft tissue density mass of size 2.4 × 1.6 × 3 cm in the right neck at the level of carotid artery bifurcation splaying the internal and external carotid artery and closely abutting the internal jugular vein and of size 4 × 3.5 × 5.2 cm in the left neck with same features [Figure 1a and b; solid arrow]. Incidentally, another DOTANOC avid hyperenhancing soft tissue density mass lesion measuring 10 × 8 mm was found just above the anterior commissure of larynx [Figure 1c and d; solid arrow]. To further

confirm the radiotracer uptake in the larynx, fiberoptic laryngoscopy was done which demonstrated hyperaemic small mucosa covered swelling at the anterior most part of left false cord [Figure 2]. Subsequent histopathological evaluation revealed feature of glomus tumor of the larynx.

Carotid body tumors are the most common head and neck paragangliomas,^[1]

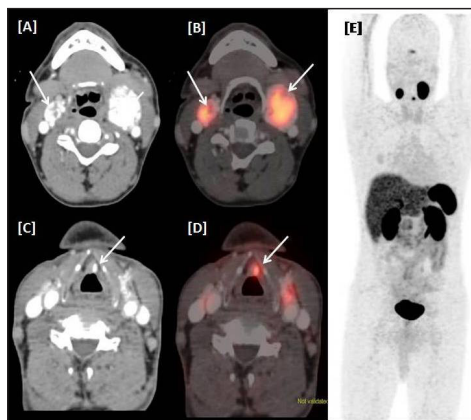


Figure 1: DOTANOC PET/CT revealed DOTANOC avid hyperenhancing soft tissue density mass in the bilateral neck at the level of carotid artery bifurcation splaying the internal and external carotid artery (Figure 1 A, B solid arrow). Incidentally another DOTANOC avid hyperenhancing soft tissue density mass lesion found just above the anterior commissure of larynx (Figure 1 C, D solid arrow).

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Figure 2: fibre optic laryngoscopy demonstrated hyperemic small mucosa covered swelling at the anterior most part of left false cord

whereas paragangliomas of the larynx are rare, and unlike other tumors of the larynx, they are more common in females (female/male ratio: 3/1) with a mean age of 44 years.^[2,3] Somatostatin receptor PET/CT using ⁶⁸Ga labelled octreotide analogues has a very high sensitivity and specificity in the evaluation of patients with pheochromocytomas and paragangliomas with a significant impact on patient management,^[4,5] especially in patients with head and neck paragangliomas.^[6] In a study by Naswa *et al.*^[7] on five patients with CBTs using ⁶⁸Ga- DOTANOC PETCT, additional lesions were detected in three patients. Although detection of additional paragangliomas and pheochromocytomas^[8] has been described with this tracer, association of glomus tumor of the larynx has never been reported with bilateral carotid body tumour. This case therefore further confirms the importance of pre-operative work-up of patients with head and neck paragangliomas using ⁶⁸Ga-DOTANOC PET/CT since these undetected

lesions could serve as nidus for tumor recurrence and patient debility.

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Conflicts of Interest

The authors declare no conflicts of interest.

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