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Case Report of Carotid Body Tumor

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Abstract: ***The carotid body is collection of paraganglia in head and neck and is found on medial aspect of carotid bifurcation bilaterally. Carotid body tumors are rare neoplasms arising from chemoreceptor cells of the carotid bulb.1 We reporting a case of carotid body tumor in a 56-year-old female, who presented with pulsatile painless right lateral neck swelling with gradually increasing in size. The diagnosis is suspected on the basis of history, clinical and radiological examination findings.***

Keywords: Carotid body, Paraganglioma, chemoreceptor

1. Introduction

Carotid body tumors known as paragangliomas or chemodectomas, are rare neuroendocrine neoplasms which arise within glomus cells derived from embryonic neural crest near carotid bifurcation. The incidence of CBTs is 1–2 per 100, 000.2 CBTs are accounts for 0.6% of the head and neck tumors in humans. The CBT is usually benign with below 10%incidence of malignant tumors[3.]

We report a case of56 year-old Female patient with pulsatile painless swelling right lateral aspect of neck for 3 months. Ultrasound was done which shows a well defined heterogeneously hyperechoic lesion at bifurcation of right Common carotid artery into internal carotid artery (ECA) and external carotid artery (ECA) with internal vascularity. This lesion is splaying the Right ICA and ECA giving typical lyre sign.

CECT neck was done which shows intensely enhancing mass at bifurcation of right ICA and ECA splaying these arteries giving lyre sign which is typical sign of carotid body tumor.

2. Case Report

A 56 year-old young female patient with pulsatile painless swelling right lateral aspect of neck for 3 months who presented to ENT OPD was sent for radiological investigation. Ultrasound and CECT abdomen was done for localization and characterization of lesion.

Ultrasound was done which shows a well defined heterogeneously hyperechoic lesion at bifurcation of right Common carotid artery into ICA and ECA splaying this two arteries giving Lyre sign.

CECT neck was done which shows intensely enhancing mass at bifurcation of right ICA and ECA splaying right ICA and ECA giving lyre sign which is typical sign of carotid body tumor

Based upon clinical examination, ultrasound and CECT neck finding of Lyre, s sign diagnosis of carotid body tumor iskept.

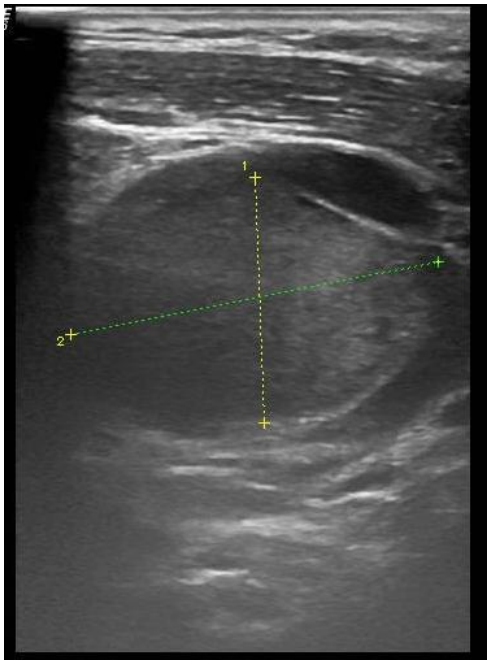

Figure 1 (a)

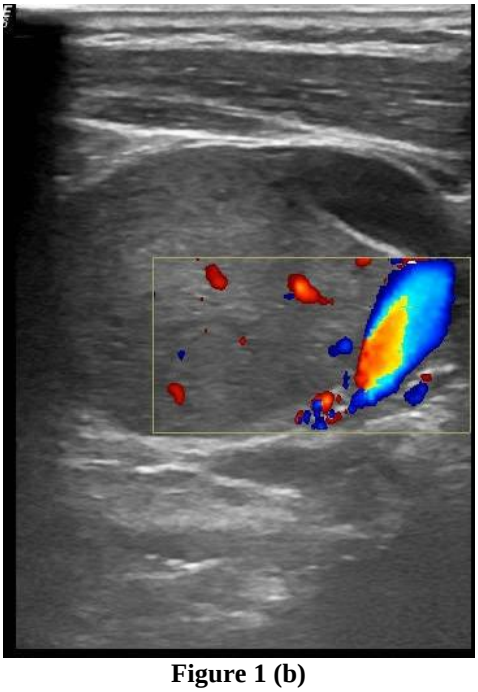

Figure 1 (b)

Figure 1 (a-b). Ultrasound neck images shows well defined hyperechoic lesion with internal vascularity at bifurcation of right common carotid artery into right internal carotid artery (ICA) and external carotid artery (ECA) causing splaying giving Lyre, s sign.

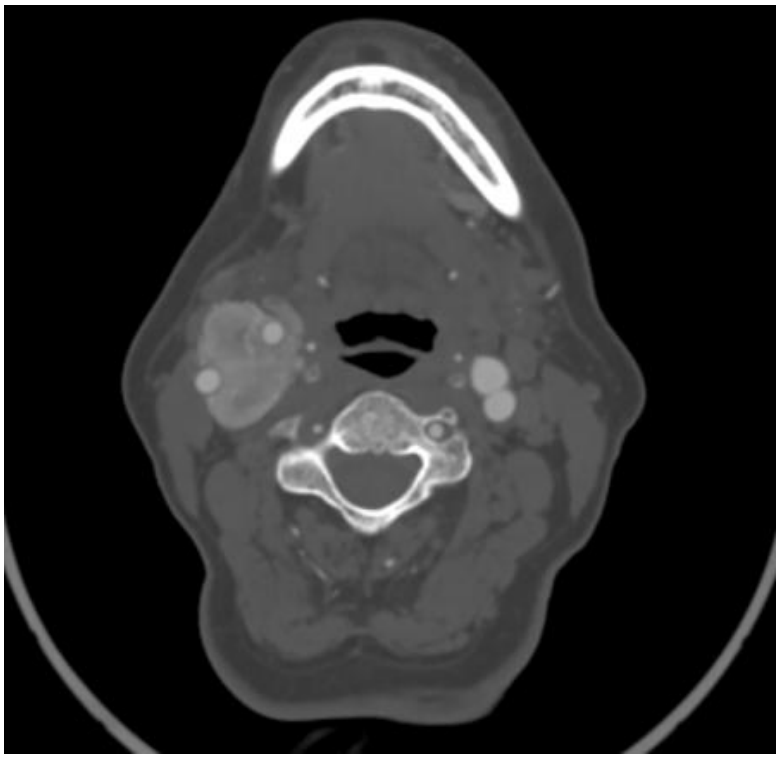

Figure 2: CECT neck axil image shows intensely enhancing soft tissue at bifurcation right common carotid artery (CCA) into ICA and ECA giving Lyre, s sign

Figure 3: CECT neck sagittal (Fig.3a) and coronal (Fig.3b) images shows intensely enhancing soft tissue at bifurcation of right common carotid artery into right ICA and ECA.

3. Discussion

The carotid body is the largest collection of paraganglia in the head and neck and is found in carotid space. Carotid body was firstly described by von Haller in year 1743[4]. It is a well circumscribed, highly specialized round organ, located in adventitia of carotid bifurcation, supplied by feeding vessels run primarily from ascending pharyngeal branch of external carotid artery, and innervated through glossopharyngeal and vagus nerves.

The normal carotid body measures 2–6 mm in diameter but is often larger in people living at higher altitudes. It functions as a chemoreceptor organ which is stimulated by acidosis, hypoxia and hypercapnea, and plays a role in the autonomous control of blood pressure, heart rate, respiration, and blood temperature in response to changes in these parameters by increasing sympathetic flow.5

CBTs have diagnostic and management difficulties since there is a lack of guidelines in the literature for their diagnosis and treatment. CBT diagnosis is suspected following a detailed physical examination, the diagnosis is almost always established by radiological imaging methods such as duplex ultrasonography, CT angiography, MR angiography, and digital subtraction angiography.6

Ultrasonographic examination is widely used for screening because it is an easily available and non-invasive imaging modality. CT and MRI help to assess the size, degree, and invasiveness of the tumor. Angiographic methods allow the evaluation of the vessels supplying the tumor and preoperative embolization. On account of the hypervascularization and proximity to various vascular and nervous structures of these tumors, biopsy as a diagnostic method is contraindicated since it presents a risk of massive hemorrhage and dissemination and can lead to pseudoaneurysm formation and carotid thrombosis as well.7

4. Conclusion

In conclusion, Carotid body tumors (CBTs) are rare neuroendocrine neoplasms arise near the carotid bifurcation within glomus cells derived from the embryonic neural crest. If a diagnosis of CBT is suspected following a detailed physical examination, the diagnosis is almost always established by radiological imaging methods such as duplex ultrasonography, CT angiography, MR angiography, and digital subtraction angiography [6]. The ultrasonographic examination is widely used for screening because of its easily availablity and non-invasive imaging modality

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