Case Report

Carotid Body Tumour with Unusual Presentation- a case report

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Abstract

An asymptomatic swelling in the neck region has many differential diagnosis with the most common being enlarged lymph node and carotid body tumor being the last thing.Most patients receive medical treatment for accidental findings of the transverse masses in the cervical part.We present here a case of carotid body tumor suspected intraoperatively and reveled after histopathological examination.

Keywords: Carotid Body Tumor; Neck Swelling;Paragangliomas

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INTRODUCTION

Paragangliomas (PGLs) are infrequent tumors with the incidence of about 1-2 per 100,000 and are classified based on their locations. Only three percent (3%) of all PGLs occur within the head and neck of which the majority are located in the carotid body (carotid body tumors), temporal-bone/middle-ear (glomus jugulare), and the vagus nerves in the neck (vagal PGLs).[1] Carotid body tumor (CBT) is the most frequently seen paragangliomas of head and neck ,arising from the carotid body chemoreceptors but rarely seen clinically, thus the corresponding diagnosis and management presents a challenge for the clinician. Most patients undergo medical treatment for accidental finding of the transverse masses in the cervical part, and some patients may complain of symptoms such as local tremor,palpitations or pulse-like vibratory sense in the mass site and headache, c, , etc.[2] We present here a case of carotid body tumor suspected intraoperatively and revealed after histopathological examination.

CASE REPORT

A 70-years-old male had a left sided neck swelling for 10 months which increased progressively. he had a feeling of discomfort in the region on and off but had no other symptom. On examination, there was single swelling below the angle of the mandible. , firm, non tender, non pulsatile ,non fixed to skin. clinically ,it looked like a metastatic mass.Pan endocopy was normal. FNAC from the mass was suggestive of reactive hyperplasia. CECT neck revealed large hetrogenous mass in carotid triangle, 47 x 51 mm,s uggesting a enlarged metastatic node or a neurogenic tumour. On clinical and radiological basis, we planned for the excisional biopsy. Patient was prepared appropriately and procedure was performed under General anaesthesia.A transverse neck skin incision was given on the side of

tumour,subplatysmal flaps were raised both upper and lower,sternocleidomastoid retracted and mass was delineated.Intraoperatively mass was seen arising between Left external and internal carotid vessels. Location of the tumour suggested the diagnosis of carotid body tumour. It was surgically excised carefully from the walls of both arteries with minimal blood loss. and sent for histopathological examination, which confirmed the diagnosis of paraganglioma. Patient was followed post operatively and events had been uneventful.

Figure 1: Pre -operative image

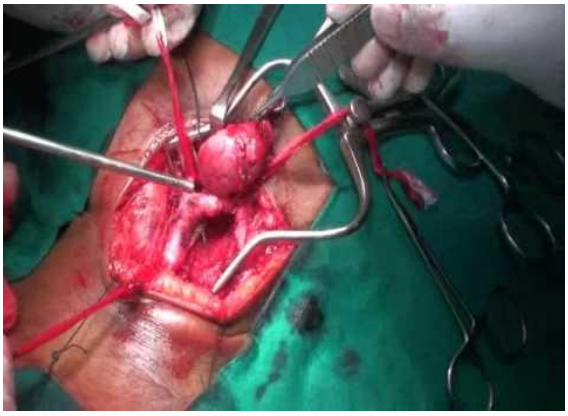

Figure 2: Intraoperatively tumour was noted to be arising from carotid bifurcation.

DISCUSSION

Paragangliomas are rare tumours of neural crest origin.[3] Carotid body tumor is often seen in patients at the age from 50 to 70 years old with higher incidence in female than that in male.[2]Each carotid body is a reddish brown colored round structure found in the adventitia of the common carotid artery and von Haller in 1743 was the first described it. It is attached to the posteromedial wall of the vessel at its bifurcation and is attached by Mayer's ligament through which the feeding vessels run (primarily from the external carotid). While the normal carotid body measures 3-5 mm in diameter; it is often enlarged in people living at higher altitudes. Afferent innervations is provided by the glossopharyngeal nerve. The carotid body detects changes in the composition of arterial blood and initiates an autonomic reflex in response to hypercapnia, hypoxia. Hypoxia and genetic factors are considered to be involved in formation of carotid body tumors, even though the exact pathogenesis remains unknown.[4]Our case had a unusual clinical presentation, and also available radiological techniques in our institute did not pointed towards the diagnosis of carotid body tumour. Hence, even if typical signs and symptoms of carotid body tumour are not present in a case of neck mass, it should be kept in mind as differential diagnosis and thorough work up must be done to avoid intraoperative complications.Physical checkup can find typical transverse beating masses, characterized by high-transverse mobility but low longitudinal mobility. Color Doppler sonography and digital subtraction angiography (DSA) play a very important role in the confirmation of the clinical diagnosis of CBTs, and DSA is regarded as the gold standard for the final diagnosis of CBTs. With the rapid development of computed tomography technology, subtraction computed tomographic angiography can facilitate the 3D-reconstructed image that can help demonstrate more directly the relationship of the tumor with the surrounding tissues.[5]The surgical resection of carotid PG poses a risk of immediate and late complications. However, the rate of surgical complications depends on how challenging the case is. Permanent nerve palsy and vascular complications are described in 2.3% of type I/II tumours and in 35.7% of type III tumours. Surgical procedure can also be complicated by profuse bleeding due to the high vascularity of the PGs.[6] Histologically, carotid body tumors have a characteristic growth pattern with well-developed nested or organoid growth pattern of the tumor cells with an intervening stromal component of delicate fibrovascular tissue and supporting cells or sustentacular cells at the periphery of the cell nests. This characteristic appearance is referred to as zellballen. The tumor cells (*i.e.* paraganglioma cells) are predominantly chief cells with round,

hyperchromatic nuclei, a dispersed chromatin and abundant granular cytoplasm which may range from eosinophilic to basophilic in color. The present case was confirmed on histopathological examination.[3]The malignant potential of CBTs has been estimated at between 5 and 10%, but in young patients, the rate is higher. Malignancy is determined by the detection of metastases in local lymphatic nodes or remote organs such as the lungs, bones, liver, pancreas, thyroid, breast, and thorax rather than by the histological criteria or development of malignancy in neoplasms. The incidence of local or distant metastases is less than 10%.[7]

CONCLUSION

Surgery for carotid PG can be associated with complications that have major impact on quality of life. A thorough assessment of the patient and neck mass must therefore be performed preoperatively in order to perform the surgical procedure under optimal conditions.

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