

## **Summary and Conclusion**

The carotid body is a round, reddish-brown to tan structure. Often larger in people living at higher altitudes. It is more peripherally located, within periadventitial tissue of the common carotid artery on the posteromedial wall of the vessel at its bifurcation.

The gland is highly vascular and receives its blood supply from the external carotid artery.

It is innervated by the Hering nerve, originating from the glossopharyngeal nerve.

They are made up of two types of cells, called glomus cells: glomus type I (chief) cells, and glomus type II (sustentacular) cells.

The SDHD (succinate dehydrogenase subunit D) mutation is the most common mutation in familial carotid body paraganglioma.

Physiologically, the carotid body functions as a chemoreceptor organ that is stimulated by hypoxia, hypercapnea, and acidosis. It is involved in the control of blood pressure, heart rate, and respiration in response to changes in these parameters by increasing sympathetic flow.

Shamblin describes 3 different types or stages of carotid body tumors. Type I consists of a small tumor that is easily dissected from the adjacent vessels in a periadventitial plane. Type II tumors are larger and more adherent and partially surround the vessel but are separable with careful subadventitial dissection. Type III tumors are large and completely surround the carotid bifurcation.

Modified Shamblin classification suggest that a CBT of any size, if intimately adherent to the vessels, should be classified as modified Shamblin class IIIb, whereas IIIa represents the original III described by Shamblin.

Carotid body tumors present most commonly as an asymptomatic palpable neck mass in the anterior triangle of the neck. They are slowly growing tumors that can remain asymptomatic for many years.

The clinical symptoms vary according to size and location of the paraganglioma. Patients with a mass lesion in the neck, hoarseness, a cranial nerve deficit or a pulsatile tinnitus can be suspected of a head and neck paraganglioma. Only a small percentage of these patients will suffer symptoms due to vaso-activity such as palpitations, hypertension, and flushing.

Carotid body paragangliomas are diagnosed by: Doppler ultrasound, carotid artery angiography, cranial computed tomography, magnetic resonance imaging, and CT angiography.

Excision is the preferred treatment of Carotid body tumors .CBTs are rare highly vascular lesions that frequently require preoperative embolization via a transarterial route or direct intralesional embolization to gain easier accesses to the tumor vasculature and thus increase the likelihood of complete embolization to minimize surgical morbidity secondary to blood loss. The present controversies surround the role of angiographic embolization, radiation and the use of carotid shunting.

### **Future prospects**

Future clinical research should therefore focus on the evaluation of existing, less invasive treatments and development of new treatments should be sought of. The goal for the treatment in these patients is to obtain tumor control in combination with a low morbidity. Future basic research should be directed on the complicated biochemistry of the lesion and on the genetics, seeking a therapeutic breakthrough in definitive or adjuvant therapy.