

## Carotid Body Tumour – A Case Report

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### Introduction

CAROTID BODY TUMOURS are rather rare. 500 cases have been reported in the literature (Westbrooke et. al., 1972). We are reporting here the only case seen in the Department of Otolaryngology since the hospital was founded.

### Case Report:

T.S.S., a 45 year old Chinese male was admitted to the University Hospital on 23.6.75 with a history of a lump on the right side of the neck of 5 years duration. This lump had not increased in size during the five years since he first noticed it.

On examination, there was a lump on the lateral aspect of the right side of the neck, 7 x 5 x 3 cm at the level of the Thyroid and Hyoid cartilages deep to the Sternomastoid. The lump was firm and had a smooth surface. It was mobile in a horizontal but not in a vertical direction. Transmitted pulsations were present. No bruit was heard over it.

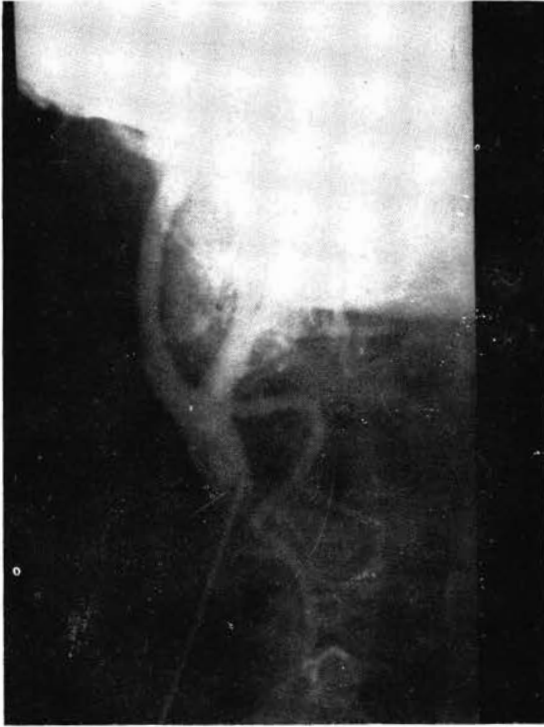
A provisional diagnosis of a carotid body tumour was made. A right carotid angiogram showed a large carotid body tumour (Figs. I & 2).

We decided against excision for the following reasons. The patient was symptomless, the tumour had not increased in size and the high risk of attempted excision. The patient is being followed up. The tumour will be excised only if it begins to press on adjacent structures or shows malignant change.

A right common carotid angiogram showed the presence of a carotid body tumour at the bifurcation of the right common carotid artery Fig. I and Fig. II



Lateral projection of right common carotid angiogram – Fig. I



**Anteroposterior projection of right common carotid angiogram - Fig. II**

**NOTE:-** The highly vascular soft tissue mass pushing apart the internal and external carotid arteries at the bifurcation of common carotid artery

### Discussion

The carotid body is the largest of the paraganglia that make up the chemoreceptor system. Histologically it consists of nests of small uniform epitheloid cells surrounded by a vascular stroma. The only pathological change occurring in the carotid body is neoplasia. Microscopically the resulting tumours are well encapsulated, homogenous pinkish grey, or brown, firm masses. Histologically, carotid body tumours resemble normal carotid body tissue. Formerly all these tumours were thought to be non-functional and were called nonchromaffin paragangliomas, but this is not so as neurosecretory granules have been demonstrated in both normal chemoreceptor tissue and in carotid body tumours. (Grimsley et. al. 1967). Furthermore, elevated urinary catecholamines have been demonstrated in carotid body tumours. The percentage of these tumours that are functional is not known.

Carotid body tumours are symptomless when small. Symptoms are seen in patients with large tumours due to pressure on the Vagus, Hypoglossal nerves, the oesophagus and trachea. An early report (Harrington et. al. 1941) suggested that about 50% of these tumours were histologically malignant,

but it is now believed that malignant change occurs only in about 5% (Javid et. al. 1967). Bilateral carotid body tumours occur in 3-4% of patients. Other chemodectomas such as glomus tumours can be associated with them as can medullary carcinomas of the thyroid.

Biopsy of these tumours can lead to severe haemorrhage and thus angiography is preferred to establish the diagnosis (Javid et. al. 1967). Stell and Maran (1972) point out that one of the worst mistakes in neck surgery is to biopsy a chemodectoma.

Management of these tumours could be by (1) Observation and follow up alone, (2) Surgery, and (3) Radiotherapy. In view of the supposed high incidence of malignancy surgical excision used to be advised in all cases. At present management tends to be more conservative in view of the high operative morbidity and mortality and the fact that malignancy is known to be rare. In Shamblin's (1971) review, there was a mortality of 7% and hemiplegia in a further 22% in patients undergoing surgery. Therefore surgery should be carried out only when (1) Tumours show evidence of malignancy, (2) Cause pressure symptoms such as airway obstruction, and (3) Possibly in young patients with small tumours which are easier to excise without damaging the carotid system. Once surgery is decided upon it should be carried out under hypotensive hypothermic anaesthesia with facilities available for carotid grafting if necessary. Preoperative, catecholamine estimations and repeated blood pressure estimations are required, to exclude functioning tumour.

Radiotherapy does not cause marked regression of the tumour. However, it can cause temporary or even permanent cessation of tumour growth. Hence it is a palliative measure used only when a patient is deemed unsuitable for surgery.

### Summary

A case of carotid body tumour is presented and the relevant literature reviewed. The dangers of biopsy and the value of angiography in diagnosis is stressed. Conservative management is advised in the majority of cases.

### Acknowledgement

We wish to thank Miss A.M. Tan of the E.N.T. Department, University of Malaya for typing this paper.

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