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CAROTID BODY TUMOUR - A RARE CASE IN A TWENTY YEAR OLD BOY

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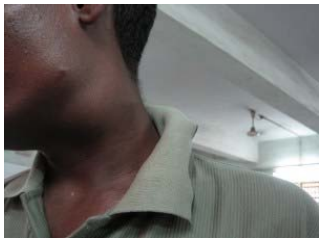
Abstract :
CAROTID BODY TUMOURS ARE RARE TUMOURS CONSTITUTING ONLY 0.5 PERCENT OF ALL TUMOURS IN THE BODY. EVEN THOUGH PARAGANGLIOMAS ARE RARE, CAROTID BODY TUMOURS FORM 65 PERCENT OF THEM IN HEAD AND NECK. HEREWITH WE PRESENT A CASE HISTORY OF A 20 YEAR OLD BOY WITH CAROTID BODY TUMOUR (SHAMBLIN CLASS II) WHO WAS SUCCESSFULLY MANAGED IN OUR INSTITUTION WITH AN UNEVENTFUL OUTCOME.
Keyword : carotid body tumour, paraganglioma, surgical management, shambling

INTRODUCTION:
Carotid body tumours are rare tumours of head and neck region. They are paragangliomas developing within the adventitia of medial aspect of common carotid artery bifurcation. Three types of carotid body tumours are described in literature – sporadic, familial, hyperplastic. Sporadic forms are the most common type (85%). Familial forms (10-50%) are more common in young. Hyperplastic forms occur in patients exposed to chronic hypoxia, COPD & cyanotic heart disease patients. Mean age at diagnosis is 55 years. 10% are bilateral and 5-10% are malignant. Most of the patients present with an asymptomatic neck mass. 10% present with cranial nerve palsy. Surgery is the treatment of choice in young patients. Radiotherapy is reserved for elderly, poor surgical candidates, those with multiple paragangliomas where resection would be highly morbid.

CASE HISTORY:
A twenty years old boy presented to our surgical OPD with complaints of swelling in the left lateral aspect of the neck for the past seven years. The swelling was absolutely painless. He gave history of syncopal attacks for the past three years. He gave no history suggestive of cranial nerve palsies or metastasis. He was not a resident of high altitude. None of his family members had similar swelling. On examination, his vitals, CVS, RS were normal. Inspection showed a 6*5cm swelling in the anterior triangle of

Figure.1



Since the swelling was pulsatile, FNAC was deferred. CT CAROTID ANGIOGRAM revealed a highly vascular mass lesion of size 7.7 (CC) *5.7 (AP)* 5.2(ML) sitting on the common carotid artery bifurcation splaying and encasing the origin of external and internal carotid arteries as shown in fig.2.

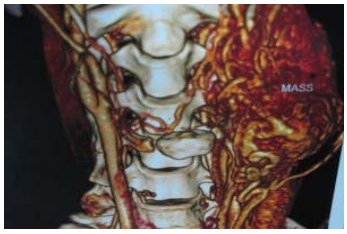


Figure.2

The swelling was also seen extending to the lateral aspect of common carotid artery mildly encasing it as shown in fig.3. The vertical extent of the lesion was from C1-2 to C5-6.

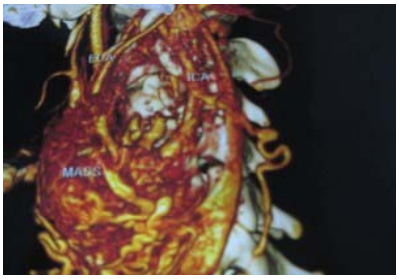
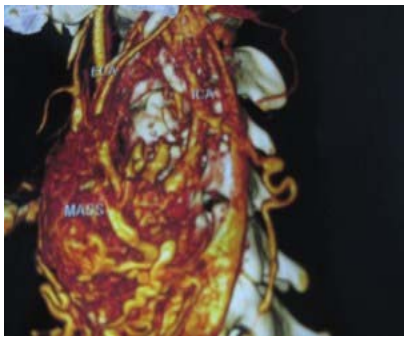
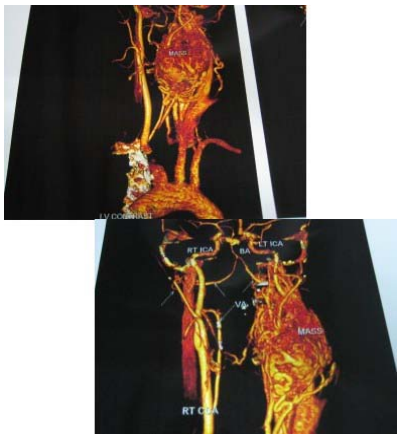


Figure.3



The swelling was receiving feeders from common carotid artery. Rest of the vessels were normal as shown in figures 4 & 5.

Figure.4 Figure.5



based on the CT ANGIOGRAM the swelling was classified as SHAMBLIN class II. An elective excision of the tumour was planned. Preoperative picture is shown here in figure.6.

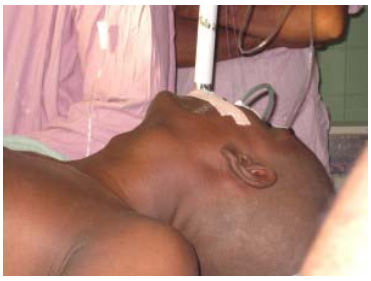
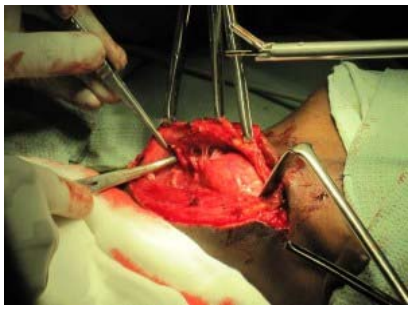


Figure.6

Under general anaesthesia, after protecting all pertinent structures, the common carotid artery, external and internal carotid arteries were sufficiently mobilised and the tumour exposed as shown in figure.7

Figure.7



The tumour was initially dissected away from internal carotid artery. It was then dissected in a periadventitial plane from common carotid artery . The tumour was completely excised and sent for biopsy. Complete haemostasis was secured and the wound closed after placing drain as shown in figure.8

Figure.8

The drain was removed on the fifth day. His post operative period was uneventful. He was discharged on tenth post op day. Biopsy reported as chemodectoma with no malignant components Carotid body tumours are uncommon neoplasms. They are paragangliomas arising from the carotid body which is a specialized chemoreceptor respondent to hypoxia, hypercapnoea and acidosis. These tumours are incidentally noted asymptomatic neck masses. These are slow growing tumours. They are 10% bilateral, 10% familial, 10% malignant.

They usually present as a slow growing asymptomatic lateral neck mass. They may be associated with a thrill or bruit. Occasionally when they become very large, compression or local invasion of adjacent structures can occur. In this situation, patient may complain of difficulty in swallowing, hoarseness and chronic cough due to compression of airway or involvement of adjacent cranial nerves. These are capable of secreting catecholamines which can cause hypertension which is usually corrected after tumour removal. Large tumours can extend into base of skull or present as a bulge in the lateral wall of oropharynx.

Carotid body tumours are usually detected by clinical examination and confirmed by imaging. Ultrasound, CT, MRI, PET are all effective for diagnosis. Bilateral imaging is advocated to rule out multicentricity. Many clinicians believe that preoperative angiograghy is mandatory.

Excision of carotid body tumours is notoriously difficult because of anatomic distortion caused by tumour bulk, high vascularity, and adherence to the carotid arteries and cranial nerves. Shamblin introduced a classification scheme that reflects the degree of technical challenge in tumour excision.

Type 1 consists of a small tumour easily separable from adventitia. Type 2 are larger tumours more adherent to vessel and partially surround the vessel. Type 3 tumours are larger and completely encase the vessel.

Once identified, these tumours should be removed. Although they are slow growing neoplasms, smaller tumours are easier to excise and eventually most will become locally invasive. Radiotherapy should be restricted to elderly, poor surgical candidates and those with multiple tumours. Role of preop embolization has been a matter of controversy. A more recent retrospective study demonstrated no difference in blood loss or perioperative morbidity between embolized and nonembolized groups.

CONCLUSION:

Carotid body tumours although rare should always be considered in the differential diagnosis of neck swellings especially in anterior triangle. Embarking on them without proper workup can create disastrous consequences. They should be surgically removed at the earliest whenever diagnosed to prevent morbidity associated with late intervention and to prevent the progress of local invasion Dissection of carotid body tumours has historically been associated with high morbidity and mortality. A recent review of literature describes mortality between 0 to 8%, cranial nerve palsy in less than 1% to 49%.

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