ORIGINAL RESEARCH PAPER

Surgery

KEY WORDS:

MANAGEMENT OF LARGE CAROTID BODY TUMOR : A CASE REPORT

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ABSTRACT

Carotid body tumor is a rare neck tumor that is derived from the neural crest1 with an incidence of 1 in 100,000 with female predliction. Large size, >5 cm size, tumors carries a high risk of postoperative morbidity and mortality and neurovascular complications2.We report a case of large size tumor which was surgically removed with minimal blood loss, no neurological loss and no cerebro- vascular complications. No preoperative embolization was performed. This case reveals that proper preoperative work up and meticulous surgical technique is the key to improve treatment outcome.

CASE REPORT

A 40-year-old married woman was admitted to deptt. Of CTVS in IGIMS Patna with a progressively increasing swelling over the right antero-lateral aspect of her neck from past 4 years. She presented with compressive symptoms in neck , tenderness, dizziness, syncope, and shortness of breath. There was no history of hoarseness, dysphagia, or palpitation .She had family history of a similar condition in her father .

C T angiograms of the carotids showed a 6.1 x 3.5 cm tumor which enhances rapidly and shows intake in arterial phase ,situated at right carotid space between ICA and ECA splaying them ,compressing the IJV, completely encase proximal ECA and part of ICA , no narrowing of lumen there was no contralateral tumor. MRI was s/o large well defined lobulated lesion hypointense on T1 w and hyper intense on T2w sized 6.2x 4.5 seen in right carotid space ,displacing common carotid laterally and partially encasing and displacing internal carotid artery. The tumor was diagnosed as carotid body paraganglioma of Shamblin group 3. No preoperative embolization was performed .Urinary free metanephrines were normal.

The tumor was surgically removed in toto under general anesthesia in periadvential plane. The ansa ,hypoglossal and vagus nerves were identified during surgery and preserved. Continous intra- op monitoring of the vitals was done and neurological status by cerebral oximeter .Blood loss was about 500 ml. Postoperatively, a transient swallowing difficulty probably due to stretching of the hypoglossal nerve during the operation. No other neurological injury .On laryngoscopic examination, no vocal cord paralysis was seen there was no cerebrovascular event after surgery. On post op day one patient was accepting orally well, neck drain was only 10 ml ,stitch line was healthy.

FIG 1. showing branches of common carotid artery external and internal carotid artery in vascular slings after removal of carotid body tumor

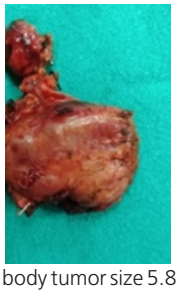

Fig 2. Removed carotid body tumor size 5.8 cm

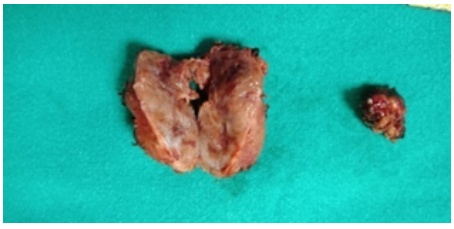

Fig.3 cut section of carotid body tumor showing dense solid areas

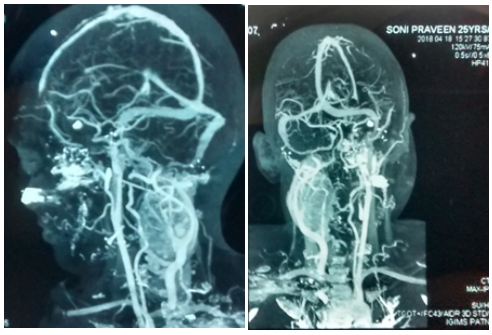

FIG 4. CT angio s/o enhancing tumor at right carotid space splaying ECA and ICA.

DISCUSSION

CBT is a paraganglioma which acts as a vascular chemoreceptors and is usually located at the carotid bifurcation[2].Although most of CBT are benign and slow growing, early excision is recommended because of the unpredictable malignancy potential. Even if the tumor is not pathologically malignant, it will continue to grow and can cause various complications and will become too difficult for a surgeon to remove without complications[3]. Most of the previous studies reported high rate of neurovascular complication (23-47%)[2,4,5] with Shamblin III tumors. The risk seems to be more significant when the tumor size is more than 5 cm[6] (similar to the present case). Therefore, early detection and prompt surgical resection of CBTs will decrease surgical morbidity. In large tumors, neurovascular symptoms and signs, such as hoarseness, vocal cord paralysis, dysphasia, Horner's syndrome, carotid pulsations, thrill, and symptoms of cerebral ischemia or carotid sinus syndrome, are usually present[7].

Noninvasive imaging studies like CT scan with contrast and magnetic resonance imaging (MRI) are useful modalities to identify CBT[8] .

Studies by Tao luo et al at deptt. of vascular surgery at Xuanwu hospital in Beijing was suggestive of similar result that surgical treatment is relatively safe . Similar study by at Ibn Rochd hospital at Casablanca in morocco was done by lezrag et al was suggestive of surgical excision in subadventitial dissection is treatment of choice.

In conclusion, despite the development of surgical and endovascular techniques, huge carotid body paraganglioma continue to have high incidence of pre- and postoperative complications. Carotid body paraganglioma should be removed immediately upon detection. Identification of the adjacent nerves during surgery is essential in reducing postoperative problems.

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