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ANAESTHETIC MANAGEMENT IN PATIENT OF GLOMUS VAGAL TUMOR

Anaesthesiology

Dr. Kiranpreet Kaur D.A, DNB., Associate Professor, Department of Anaesthesiology and Critical Care, Pt. B.D. Sharma PGIMS, Rohtak-124001, Haryana, India

Dr. Roop Singh* MS, Senior Professor, Department of Orthopedics, Pt. B.D. Sharma PGIMS, Rohtak-124001, Haryana, India *Corresponding Author

Dr. Vasudha Govil MD, Senior Resident, Department of Anaesthesiology and Critical Care, Pt. B.D. Sharma PGIMS, Rohtak-124001, Haryana, India

Neetu Khanduri Post Graduate Student, Department of Anaesthesiology and Critical Care, Pt. B.D. Sharma PGIMS, Rohtak-124001, Haryana, India

ABSTRACT

Paraganglioma from vagal origin represent less than 5% and originate within the first 2 cm of the extracranial stretch of the vagus nerve. Twenty years old male was posted for excision of mobile swelling in right side of neck of size 5× 6 cms since 2 and half years. Patient had recurrent episodes of bradycardia which was managed using atropine and isoprenaline. Successful excision was done without significant blood loss, and post-operative respiratory difficulty. Postoperative period was uneventful.

KEYWORDS

vagal tumor; paraganglioma

Introduction-

Carotid body paraganglioma are rare neoplasm, commonly benign, account for only 0.5% of all body tumors, but still constitute 60-70% of head and neck paraganglioma. The most frequent head and neck paragangliomas are carotid body tumors. The tumor arises from paraganglionic cells of the carotid body which develops from both mesodermal elements of the third branchial arch and neural elements originating from the neural crest ectoderm. Most paragangliomas of the head and neck are hormonally inactive. For these, the term "nonchromaffin paragangliomas" has been used to differentiate them from the epinephrine- and norepinephrine-secreting chromaffin tissue and tumors of the adrenal medulla and organs of Zuckerkandl (paraaortic bodies) [1,2]

Most glomus vagale tumors manifest as a painless neck mass near the angle of the mandible. Less than half of the patients are hoarse, which is the clinical manifestation of vocal cord paralysis. Glomus vagale tumors cause other lower cranial neuropathies: dysphagia, palatal weakness, and tongue hemiatrophy Pressure on the cervical sympathetic chain causes Horner syndrome Although most head and neck glomus tumors are nonsecretory, screening for catecholamines and their metabolites (urinary metanephrines and vanillylmandelic acid) may be performed before angiography or surgery. [1,2] We herein present a case report of anaesthetic management of excision of glomus vagal tumors.

Case-report

Twenty years old male posted for excision of mobile swelling in right side of neck of size 5× 6 cms since 2 and half years. The swelling is gradually progressing in nature. It was non reducible, non tender, and non transilluminating, There was no history of dyspnea or hoarseness of voice and any neurological weakness. Multiple lymph nodes were seen in bilateral submandibular & cervical region.

Baseline Pulse rate was 66 beats per minute, regular and rhythmic and Blood pressure was found to be 110/70 mm Hg. Cardiovascular and respiratory system was unremarkable. All other investigations were within normal limits (Hb-12.5gm%, bld.u-43, bld sugar-92 mg/dl. CECT neck revealed an oval hypo dense mass on right side of neck in post styloid area. The mass appeared to be in the carotid sheath just lateral to the internal carotid artery and IJV. It showed moderate heterogenous enhancement on CECT. Surrounding fat planes was maintained. Provisional diagnosis was benign neurogenic tumor

MRI neck was done and showed a large soft tissue mass lesion measuring 4×3.3×5 cms posterior to submandibular gland on right side & lateral to carotid sheath surrounding structure were displaced and seen arising from vagus nerve (Fig 1). Superiorly it was seen medial to deep lobe of parotid gland. No infiltration was seen into surrounding structure. B/L submandibular glands were slightly altered in echotexture & showed increased flow on color Doppler. Hence the diagnosis of vagal neurogenic tumor was established. Patient was posted for its excision and repair

In view of tumor arising from vagus nerve patient was given 0.6 mg of atropine prior to induction. Intraoperatively patient was induced with injection thiopentone. Injection vecuronium was used to facilitate intubation and flexometallic tube of internal diameter 8mm was successfully inserted. During surgical procedure recurrent episode of severe bradycardia was encountered with handling of tumor. Every time surgery was stopped and heart rate restored.

Two episodes were of severe bradycardia which was instantly treated with atropine injection intravenously. Recurrent bradycardia was very disturbing so isoprenaline infusion was initiated till excision of tumor. Tumor was further removed successfully without any significant changes in vitals and without any significant damage to vagus nerve. Isoprenaline infusion was stopped after excision of tumor

Postoperatively patient was extubated, vocal cords were observed, their was some sluggish movement of vocal cord of right side but left cord was moving freely. Patient had some complaint of slight difficulty in breathing. Vocalization was near normal to preoperative condition. No hoarseness or dyspnea was observed in recovery. Patient was maintaining saturation of 100% and successfully shifted to respective ward.

Discussion

Paragangliomas are tumors arising from extra-adrenal paraganglia and are present throughout the body. Paragangliomas—also called chemodectomas—of the head and neck are the most common of all paragangliomas. They may originate from carotid body, vagal body, middle ear, and larynx. The ones of vagal origin represent less than 5%. Vagal paragangliomas originate within the first 2 cm of the extracranial stretch of the vagus nerve and are associated with the inferior ganglion. Vagal paragangliomas, as other paragangliomas of the head and neck most commonly present as masses, but may cause other symptoms, such as tinnitus or hoarsness or cranial nerve paralysis. Glomus vagale tumors grow within the vagus nerve, it is almost impossible to remove the tumor without sacrificing the nerve but in our patient it was successfully removed without sacrificing the nerve. [1-3]

Most paragangliomas are benign; however, there are no definite criteria for malignancy other than the presence of metastatic disease.

The presence of capsular or vascular invasion and necrosis may be indicative of malignancy. But in our patient their was no evidence of vascular invasion and hence malignancy was ruled out.[3,4]

There can be involvement of internal jugular vein, if IJV is involved it should not be cannulated .and alternative site of cannulation should be considered. Controlled hypotension is a valuable to minimizing blood loss; if major loss expected. But there was no major vascular involvement in our patient so we didn't planned hypotensive anaesthesia.[3,5]

Bradycardia is common with involvement of vagus nerve that should be properly managed and we should be prepared with all emergency drugs. Cranial nerve involvement is frequent in these patients. In our patient Xth cranial nerve was engulfed in the tumor. Nerve palsy can result in recurrent aspiration and the patient should be evaluated for that preoperatively. Involvement of this cranial nerves also may cause dysphagia. Many patients can have vocal cord paralysis after surgery whether or not they were hoarse preoperatively. Intraoperative thyroplasty can be done at the same time the tumor is removed.[2-4]

Patient may need tracheal intubation or tracheostomy in the postoperative period. But our patient had slight difficulty in postoperative period but subsided spontaneously after thirty minutes of extubation.[3]

We conclude that meticulous monitoring with regards to blood loss, hemodynamic monitoring especially heart rate and postoperative respiratory difficulty should be done in patient having vagus tumor

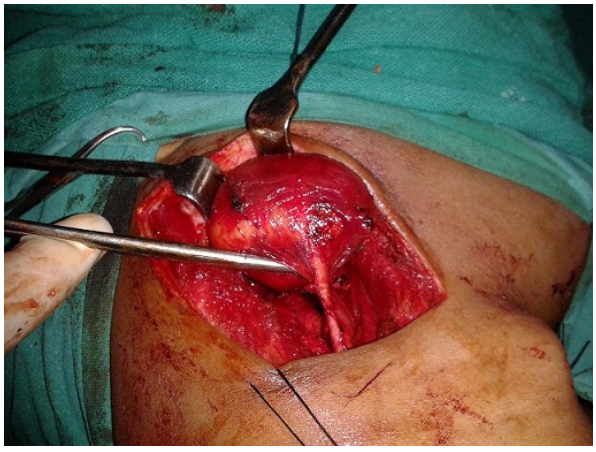

FIGURE-1 SHOWING VAGAL TUMOR

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