Research Paper

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Schwannoma of Superior Laryngeal Nerve Presenting as Parapharyngeal Tumor– a Rare Case Report

Medical Science

KEYWORDS : Schwannoma, Parapharyngeal space, Superior laryngeal nerve

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ABSTRACT

Schwannomas are the most common neurogenic tumors and arise from any nerve surrounded by Schwann cells. In the Parapharyngeal space, the most common sites of origin are the vagus nerve and the sympathetic chain. Involvement of superior laryngeal nerve is rare. Few cases have been reported as schwannoma of the larynx where the nerve of origin is internal laryngeal nerve. Here we are presenting a case of schwannoma of superior laryngeal nerve presenting as Parapharyngeal tumor. Patient was operated successfully and conformed by histopathological study. We are presenting this case because of its rarity.

Introduction –

Tumors of the Parapharyngeal space are uncommon, comprising less than 1% of all head and neck neoplasm. Both benign and malignant tumors may arise from any of the structures contained within the Parapharyngeal space. Of Parapharyngeal space tumors, 70–80% are benign, and 20–30% are malignant. Most Parapharyngeal space tumors are of salivary or neurogenic origin, although metastatic lesions; lymphoreticular lesions; and a variety of uncommon, miscellaneous lesions may arise in this location [1].

But as per neurogenic tumors, about 45% of all neurogenic tumors occur in the head and neck region and are mostly located in the parapharyngeal space [2,3]. Two types of neurogenic tumors must be distinguished: Schwannomas and neurofibromas.

Neurilemomas, or schwannomas, are the most common neurogenic tumors and arise from any nerve surrounded by Schwann cells. In the Parapharyngeal space, the most common sites of origin are the vagus nerve and the sympathetic chain.

Case Report -

A 32 year old female patient was admitted to our hospital with history of swelling in right side of neck since 2 years which was gradually increasing in size. On physical examination a non tender, firm, mobile (minimally in horizontal direction) swelling measuring 6 cm x 4 cm with smooth surface was found displacing carotid pulsation antero medially. There was no symptoms of pressure effect on trachea, esophagus. Intraoral examination finding was normal with no other mass palpable in the body. Indirect laryngoscopy and posterior rhinoscopy findings were normal. X-ray neck did not give much information. Routine blood investigations were within normal limit.

FNAC report was reactive lymphadenitis.

MRI-scan showed A well defined, oval, heterogeneous T2WI hyper intense lesion noted involving right side of neck extending from C1 to C4 vertebra, posterolateral to the carotid sheath. Carotid sheath displaced anteromedially. Lesion was deep to sternocleidomastoid muscle and parotid gland suggestive of a neurogenic tumor.

Excision of this mass was done by transcervical approach. Horizontal incision was given extending from greater cornu of hyoid bone to lateral border of sternomastoid muscle. Platisma muscle was divided and stenomastoid muscle was retracted laterally. Carotid artery found to be displaced medially was separated. External jugular vein was ligated and divided. Internal jugular vein was found lateral to the tumor and vagus nerve posterior to it. It was found that the tumor arising from the Superior laryngeal nerve almost covering the nerve. Tumor could not be separated from the nerve for which it had to be sacrificed and tumor was removed.

Intra operative findings showed a well circumscribed encapsulated mass with no evidence of infiltration. Vagus nerve and cervical sympathetic chain were normal. One lymph node found on the surface of the tumor was sent for the histopathological study along with the tumor mass.

On gross examination it was a lobulated mass and on cut section it was homogenous, firm, grayish white in appearance. No areas of hemorrhage or necrosis seen.

Microscopic section showed a tumor composed of benign short spindle cells with wavy nuclei with no atypia or necrosis or increased mitosis which was suggestive of benign Schwannoma and antoni type A predominating. Histopathology of the lymph node showed reactive hyperplasia.

Post operative period was uneventful and patient was discharged after suture removal on seventh post operative day with an advice to have a periodical follow up.

On first post operative visit after 15 days, patient was complaining of voice fatigue without voice change or aspiration. On video laryngoscopy mild bowing of the right vocal cord was seen with normal mobility of both the cords.

Discussion -

The Parapharyngeal space (PPS) is shaped like an inverted pyramid, extending from the skull base superiorly to the greater cornu of the hyoid bone inferiorly. The superior border of the PPS comprises a small area of the temporal and sphenoid bones, including the carotid canal, jugular foramen, and hypoglossal foramen. The PPS is limited anteriorly by the pterygomandibular raphe and pterygoid fascia and posteriorly by the cervical vertebrae and prevertebral muscles. The medial border of the PPS is the pharynx, and the lateral border is comprised of the ramus of the mandible, the medial pterygoid muscle, and the deep lobe of the parotid gland. Below the level of the mandible, the lateral boundary consists of the fascia overlying the posterior belly of the digastric muscle. The fascia from the styloid process to the tensor veli palatini divides the PPS into an anteromedial compartment (i.e. prestyloid) and a posterolateral (i.e. poststyloid) compartment. The prestyloid compartment contains the retromandibular portion of the deep lobe of the parotid gland, adipose tissue, and lymph nodes associated with the parotid gland. The poststyloid compartment contains the internal carotid artery, the internal jugular vein, CNs IX-XII, the sympathetic chain, and lymph nodes.

Of the masses found in parapharyngeal space, 40–50% of the tumors are of salivary gland origin. Lymph node metastasis and primary lymphoma represents 15% of lesions. Neurogenic lesions are the most common tumors of the poststyloid PPS and account for 25–30% of PPS lesions [4]. Schwannomas are the most commonly encountered lesions, followed in frequency by paragangliomas and neurofibromas.

Neurilemomas, or schwannomas, are the most common neurogenic tumors and arise from any nerve surrounded by Schwann

cells. In the PPS, the most common sites of origin are the vagus nerve and the sympathetic chain. Schwannomas are slow growing and rarely cause palsy of the nerve of origin. They are encapsulated and histologically distinct from the nerve itself. Treatment is by enucleation, and preservation of the nerve of origin is usually possible; however, every patient should be cautioned about the possibility of postoperative paralysis. Tumors arising anterior to styloid process are most likely of salivary gland origin, whereas those of a retrostyloid compartment are vascular or neurogenic [5].

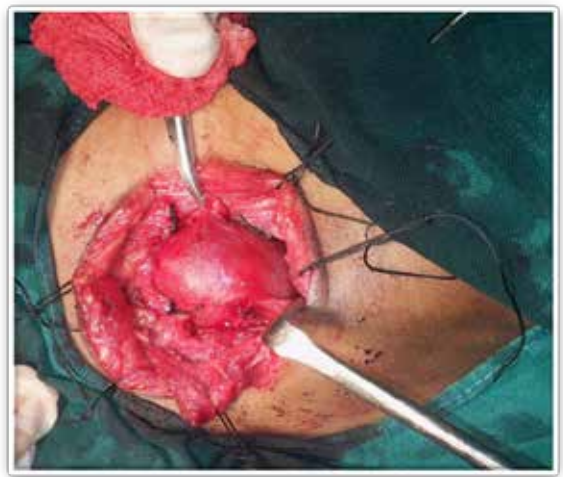
CT scan and MRI scan can localize a PPS mass in the prestyloid or poststyloid space. It may also demonstrate whether the mass arises from the deep lobe of the parotid; a fat plane between the parotid and the mass suggests an extraparotid origin. With contrast infusion, the relationship of the mass to the great vessels may be appreciated, although enhanced poststyloid lesions may be difficult to separate from the carotid artery [6].

Schwannomas involve males and females equally and can occur at any age (7). With expansion of the tumor, the nerve fibers become splayed over the outer aspect of the capsule, rather than getting incorporated within the substance of the tumor. Some cases of laryngeal schwannoma have been reported. The most common nerve of origin of laryngeal schwannoma is the internal branch of superior laryngeal nerve (8). The nerve of origin, however, is difficult to identify at operation, as occurred in our patient. Still the anatomical location of the tumor indicated that it arose from the branches of superior laryngeal nerve.

Usual surgical approaches for parapharyngeal schwannomas are transcervical, trans cervical-trans parotid, trans cervical-trans mandibular, trans oral and infratemporal approaches depending upon the site and size of the tumor.

Conclusion –

The common sites of origin of schwannomas in Parapharyngeal space are the vagus nerve and the sympathetic chain. Involvement of superior laryngeal nerve is rare. Some cases have been reported as schwannoma of the larynx where the origin is from internal laryngeal nerve. We are presenting this case because of its rarity.



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