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FACIAL NERVE SCHWANNOMA PRESENTING AS EXTERNAL AUDITORY CANAL MASS-A CASE REPORT AND REVIEW OF LITERATURE

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ABSTRACT

Schwannoma is a benign tumor. which arises from Schwann cells. Most common schwannomas are found within vestibulocochlear nerve. Facial nerve schwannoma is an uncommon benign tumor. There is no specific pattern of presentation and can easily remain undiagnosed. Most patients presented with facial nerve palsy but here we present a case of 45yrs old female who presented only with Left EAC mass.

KEYWORDS

External auditory canal, Facial nerve, Schwannoma,

Introduction

Facial nerve schwannomas are rare tumor of facial nerve. It can arise anywhere along the course of facial nerve, from its origin in cerebellopontine angle to its extracranial course in parotid space.1,2 Incidence of all intrapetrous mass lesion, facial nerve schwannoma is only 0.8%.3 They arise from myelin sheath which is made up of Schwann cells.

Case Report

We present a case of 45yrs old female with chief complaint of EAC mass along with bloody discharge for 3 months. It was gradual in onset and progressive in nature. There was no improvement with medical treatment. On clinical examination pinkish mass present in left external auditory canal. (Fig-1) On CT finding left EAC mass mastoid air cells are not pneumatized, sclerosis, opacification, disruption of bony trabeculae and small osteolytic lesion is seen. (Fig-2) Left ear ossicles are partially disrupted with poor pneumatization of middle ear. Left EAC mass was excised by trans mastoid approach under GA and tissue sent for histopathology which was suggestive of Schwannoma.

Figure-1 show mass coming from left external auditory canal.

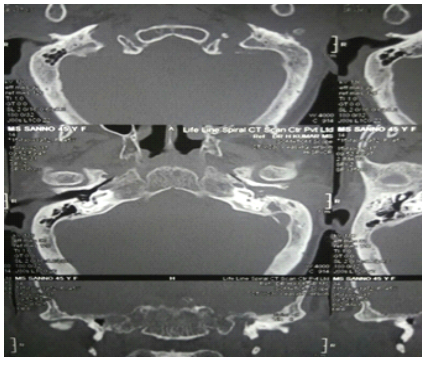

Figure-2 show HRCT finding of left temporal bone.

Discussion.

Schwannoma is an ectodermal benign encapsulated tumor arising from Schwann cells. Schwannoma of the facial nerve are extremely rare which can arise anywhere along the course of facial nerve.2 Peak incidence is between 3rd and 6thdecade. Incidence is same in males as well as females. These tumors can arise from any segment of the nerve from the cerebellopontine angle to the extra temporal peripheral portion.4,5 They can be located intracranially, intratemporally or extra temporally. One study of 600 temporal bone study reveals reported facial nerve schwannoma incidence of 0.8%. The incidence of intratemporal facial neuromas was 0.8% in a cadaveric study, although this figure is higher than the rate of clinical presentation.6 Most of these tumors are intratemporal. Clinical presentation not only differs based on site but also due to variability of structures getting involved. Facial nerve paralysis, hearing loss, facial nerve pain, hemi facial spasm, decreased lacrimation. Slowly progressive or sudden facial weakness, often preceded byfacial twitching, is a common complaint.7 In about 5% ofpatients with Bell's palsy, a facial nerve neuroma is found to be the cause.8 But it has been found, normal facial nerve function has been reported in 27% of patients.9 Schwannoma can arise anywhere along the course of facial nerve from the cerebellopontine angle to neuromuscular junction but there is predilection for the involvement of the geniculate ganglion. From here it can extend to involve tympanic segment or labyrinthine portion of facial nerve. Uncommonly facial nerve can involve middle cranial fossa by direct upward spread through temporal bone. Most common presentation is occurrence of facial nerve paralysis which is progressive and is occurring over months. Hearing loss may be conductive, cochlear, retro cochlear. Origin from mastoid portion can present as ear polyp coming from posterior wall of external auditory canal. In this case ear discharge may be present. Diagnostic work up includes audiological test, auditory brain stem evoked response audiometry, CT and contrast enhanced MRI. CT and MRI are complimentary to each other. As for the diagnosis of facial nerve neuroma, the presence and extension of the tumor can be seen most accurately by radiologic examination. Bone targeted high-resolution CT of the temporal bone is believed to be superior to MRI. Enlargement of the facial nerve suggests involvement of a neoplastic process.10 Electromyography is helpful for quantifying the nerve's residual motor function and predicting postoperative prognosis of facial recovery after nerve reconstruction.11 Electroneuronography can help predict the prognosis of postoperative facial palsy. It is believed that better postoperative results are achieved when the nerve is repaired if compound action potentials decrease no more than 50%.12 Treatment includes surgical removal. Approach depends on the site of tumor, size of tumor and hearing loss. Timing for surgery is controversial. Because facial nerve neuromas almost always grow slowly.12 To delay the need for complete resection further, wide tumor decompression to allow the tumor to expand outside the natural bony confines has also been advocated.12However, some authors believe that the surgical approach becomes more difficult, the likelihood of postoperative complications increases, and the recovery of facial function is poorer if the tumor continues to grow.5,15 The risk of surrounding structures

such as the inner ear being invaded increases and eventually the brainstem may become compressed.12,13 Surgical resection of facial nerve neuromas is indicated without delay for patients with progressive facial palsy or paralysis, for large cerebellopontine angle tumors compressing the brainstem or producing hydrocephalus, and for tumors invading the inner ear.12 The surgical approach should be chosen based on the anatomic location and extension of the tumor.12 A tumor proximal to the geniculate ganglion with serviceable hearing should be approached through the middle cranial fossa provided the tumor does not extend far into the cerebellopontine angle. If the tumor is proximal to the mid IAC with ≤1 cm of a CPA component, an extended middle cranial fossa approach is best. A retro sigmoid approach gives the best chance of hearing conservation inlesions with a CPA component >1 cm. with nonservice able hearing, a trans labyrinthine approach is the most direct route to the tumor and is the procedure of choice. This approach also provides the best access for facial nerve grafting. Involvement of the tympanic segment can be reached by a trans mastoid approach with facial recess opening. Mastoid segment tumor alone can be extirpated through the mastoid, whereas additional extra temporal involvement may require following the nerve into the parotid gland.13,14,16 These exposures may be used in combination for tumors involving multiple nerve segments. The tumor must be removed along the segment of facial nerve with cable grafting of nerve for reconstruction. A further controversy involves reconstruction of the nerve. Some authors have reported success with removal of the tumor and preservation of nerve integrity, but this does not give good facial function.17,18 Primary anastomosis without tension is rarely possible without mastoid segment rerouting, which if possible may compromise with blood supply of nerve itself. Cablegrafting is usually performed with the greater auricular or sural nerves, but any rehabilitative technique that is to be used shall be used before severe atrophy of facial muscles has occurred. The grafting can be done with greater auricular nerve or sural nerve.

Conclusion.

Though Facial nerve schwannomas are very rare tumor but can easily be missed out because other pathological conditions can mimic mass in ear. Due to delay in diagnosis it can lead to increased morbidity. With the help of proper history taking, examination and suitable imaging techniques early diagnosis is possible. Early diagnosis also helps in surgery as large masses complicate surgical procedures.

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