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Case Report

Glomus tympanicum type III- with delayed postoperative facial palsy: our experience

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ABSTRACT

Glomus tympanicum is a very rare, benign, locally invasive and slow growing vascular tumor of the middle ear. It is a second most common tumor of the temporal bone and most common benign neoplasm of the middle ear. It originates from the glomus bodies, found over promontory. In this case report, we discuss about a 47 years old female, diagnosed with type III glomus tympanicum, and operated through a transmastoid approach for tumor resection. The patient had a delayed onset of LMN facial palsy post operatively, which recovered completely after conservative management.

Keywords: Glomus tympanicum, Facial nerve, Transmastoid, Temporal bone

INTRODUCTION

Glomus tumor, also known as non chromaffin cell paraganglioma, arises from the neural crest cells. Glomus tympanicum is a locally invasive, benign tumor of the middle ear associated with the Jacobson's nerve, a branch of glossopharyngeal nerve.[1] This glomus tympanicum is common in middle aged women, who may present with pulsatile tinnitus, recurrent ear bleed, reduced hearing, giddiness and facial nerve palsy.[2] Diagnosis of this tumor is made clinically and with help of computed tomography and magnetic resonant imaging.[3] Definitive diagnosis can be done with histopathology features and immunohistochemistry (post operatively).[2] Treatment of this glomus tympanicum and the type of surgical approach depends on the staging of the tumor.

CASE REPORT

A 47 years old, female patient, reported to our Otorhinolaryngology outpatient department, with the complaints of reduced hearing and ringing sensation in the left ear since one year. The reduced hearing was insidious in onset and gradually progressive and it was associated with ringing sensation, which was pulsatile in nature. Patient did not have any past history of ear bleeding/ ear discharge. No other significant past history was noted.

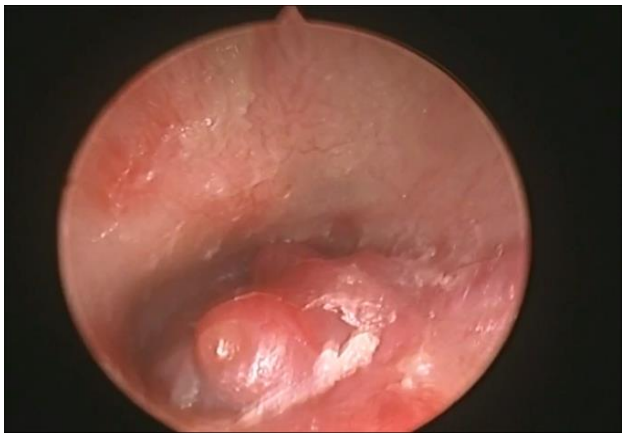

Figure 1: Pulsatile polypoidal vascular mass pushing left tympanic membrane.

On examination of left ear, a pulsatile polypoidal mass pushing the tympanic membrane laterally was seen (Figure 1).

On ipsilateral compression of carotid artery, cessation of tumor pulsation was noted (Aquino's sign). Right ear was normal on examination. Tuning fork test showed a moderate conductive hearing loss on left ear. Systemic examination was normal.

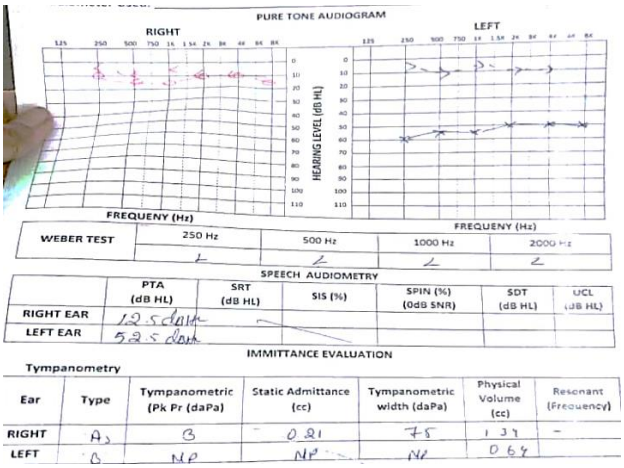

Figure 2: Pure tone audiometry (preoperative).

Pure tone audiometry showed a 52.5 decibel, moderate conductive hearing loss with a type B impedence curve in left ear (Figure 2).

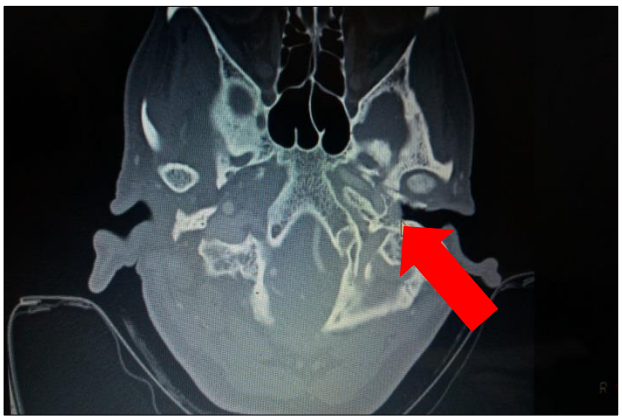

Figure 3: HRCT of temporal bone (red arrow pointing the soft tissue mass on left side).

HRCT temporal bone showed, a soft tissue density with intensely enhancing lesion of size 14×6 mm within the left tympanic cavity and hypotympanum, centred just medial to the promontory with ossicular erosion (Figure 3). Findings were suggestive of glomus tympanicum.

Clinically, and after preliminary investigations, a diagnosis of type III (according to Glasscock Jackson classification) glomus tympanicum was done. A transmastoid approach for tumor resection was planned.

After explaining the need for surgery to the patient, informed and written consent was taken for surgery. Pre-operative work up was done. All reports were within normal limit.

Under general anaesthesia, a modified radical mastoidectomy was done. Intraoperatively, the glomus tumor was found adherent to the tympanic membrane and pushing the tympanic membrane towards external auditoy canal. The glomus tumor was occupying the mastoid cavity extending to aditus, middle ear and the hypotympanum. Malleus and incus was eroded (Figure 4). The tumor was extending till Eustachian tube orifice and the orifice was found to be widened. The glomus tumor was excised completely from the above mentioned areas. While excising the tumor near the oval window area, stapes was dislodged, so the temporalis fascia was placed over the oval window, and then foot plate was plugged over the oval window. Facial nerve was intact. Mastoid cavity was obliterated with soft tissue. Type III tympanoplasty was done. Mastoid dressing applied. The intraoperative period was uneventful. Patient was shifted to recovery room. Excised specimen was sent for histopathology.

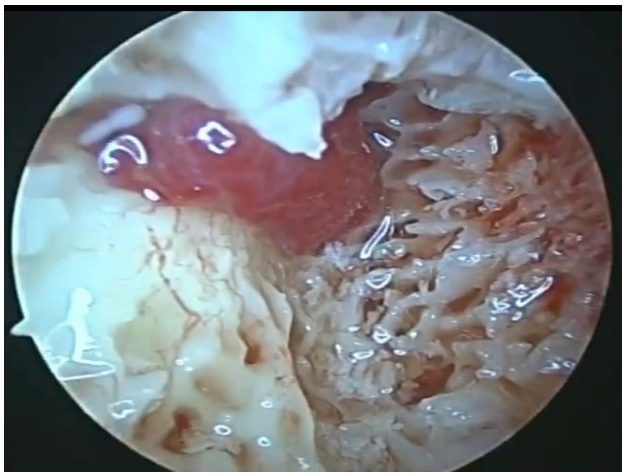

Figure 4: Glomus tumor in mastoid cavity (aditus and antrum).

Postoperatively, patient was started with intravenous antibiotics and analgesics. Patient had giddiness and vomiting at 6th post-operative hour. On examination Facial nerve was intact on both sides and there was no nystagmus. So, patient was started with intravenous labyrinthine sedatives. On second post-operative day, patient was discharged in stable condition.

Patient reviewed to the OPD on 7th post-operative day, with complaints of sudden onset of inability to close the left eye, and drooling of saliva. On examination, patient had a lower motor neuron type of facial nerve palsy (House Brackmann grade 3). Patient was started with acyclovir 400 mg 5 times a day, oral prednisolone with tapering doses, eye care and physiotherapy. After 4

weeks of treatment facial palsy recovered to House Brackmann grade 1 (Figure 5).

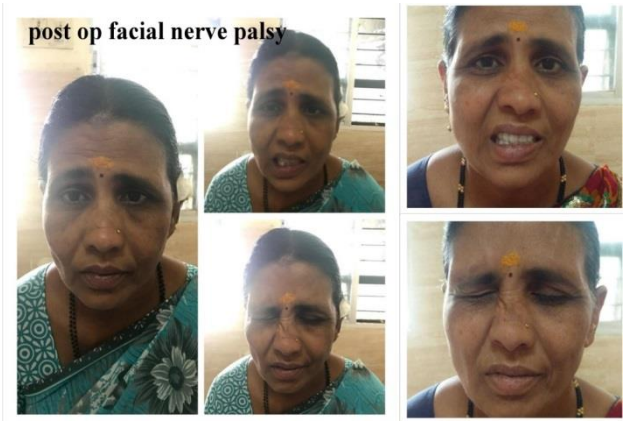

Figure 5: Postoperative facial palsy (A-C) on postoperative day 7 and (D, E) on 5 weeks postoperatively.

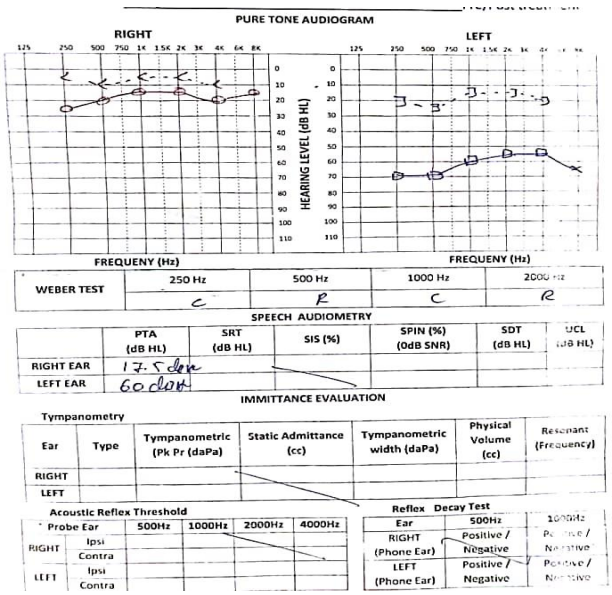

Figure 6: Pure tone audiometry (postoperative).

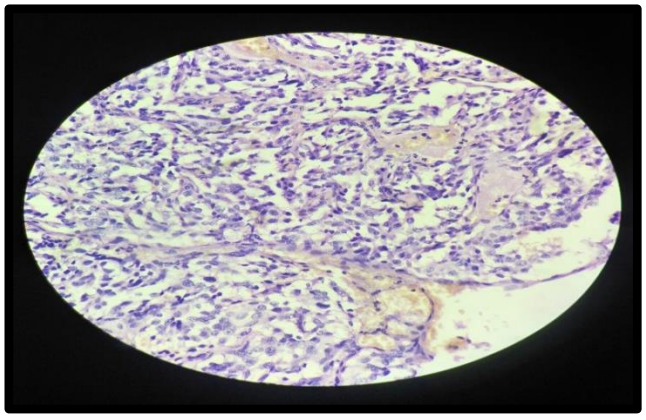

Figure 7: Histopathology showing spindle cells and dilated vessels.

Although the foot plate was dislodged from oval window, and it was repositioned in its place, we observed there was no post-operative sensorineural hearing loss. The 3 month post-operative PTA showed conductive hearing loss (Figure 6).

The histopathology report showed spindle cells with fibrovascular septae and dilated blood vessels and features suggestive of glomus tumor (Figure 7).

DISCUSSION

Temporal bone tumors are rare entity and they usually present with symptoms like decreased hearing and tinnitus. Since the tumors growth is very slow, the symptoms appear late and subsequently diagnosis also gets delayed.[4] Comparing to glomus jugularae (which arises near jugular vein), glomus tympanicum is more common.[5]

Since the glomus tympanicum is in close proximity to the facial nerve, facial palsy can be a presenting complaint. But according to few studies, only 3% of patients with glomus tumor present with initial facial nerve palsy along with other symptoms.[6] And intraoperative facial nerve palsy also is common, which might be iatrogenic during the resection of the tumor.[7]

But in this case, there was a delayed onset of facial nerve palsy, post operatively. In a study done by Safdar et al, the incidence of delayed facial nerve palsy following tympano-mastoid surgery is low. It can occur up to two weeks after the surgery.[8] Viral reactivation to be an important aetiological factor in the development of delayed onset facial nerve palsy. The overall prognosis for delayed facial nerve palsy following surgery appears to be good.[8] Similarly in our case, the delayed onset facial palsy had a good prognosis.

CONCLUSION

Glomus tympanicum (paraganglioma), is a slow growing tumor of the middle ear, treatment of the tumor needs surgical resection and the type of surgery depends according to the staging of the disease. Delayed post-operative facial nerve palsy can occur as a complication following surgery. This rare occurrence and the good prognosis of this delayed post-operative facial palsy prompted us to publish this case report.

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Ethical approval: Not required

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