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Original Research Paper

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CONGENITAL ANOMALY OF STAPES AND ABNORMAL PATHWAY OF FACIAL NERVE: A CASE REPORT

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ABSTRACT Congenital stapedial absence is a rare condition and may or may not associated with middle and/or external ear anomaly. Facial nerve anomaly can be associated with stapedial deformity or agenesis. This is a case of a patient with history of bilateral hard of hearing, vertigo(on/off) who visited ENT outdoor, Patient was already using hearing aid, Pure tone audiogram shows bilateral conductive hearing loss of 60 dB on right side and 66 dB on left side. On exploratory tympanotomy facial nerve was found on floor of medial wall of middle ear, stapes was not visible, facial nerve confirmed by using nerve monitor. Intra operative nerve monitoring is a useful tool for nerve identification.

KEYWORDS : Nerve monitor, Congenital anomaly, Exploratory tympanotomy.

INTRODUCTION

Embryologically development of the external and middle ear from the first and second branchial arch while facial nerve develops from second branchial arch. Development of facial neve completed on eight weeks of gestation. Abnormal facial nerve pathway commonly associated with the anomaly of external and middle ear because they develop simultaneously[1].

Case Report

A 23-year-old male patient presented to ENT OPD with bilateral hard of hearing since childhood with vertigo(on/off). Patient was already using hearing aid from last three years in right ear. There was no history of ear discharge, trauma, prior ENT surgery, headache, vomiting, any facial or ear deformity. Pure tone audiogram shows bilateral conductive hearing loss of 60 dB on right side and 66 dB on left side. Impedance audiometry shows bilateral Ad type tympanogram and bilateral absent acoustic reflexes. We are not performing radiological scan for otosclerosis or ossicular discontinuity on routine basis. After routine blood investigation we go for exploratory tympanotomy of right side on patient choice, under local anesthesia via Endaural approach. After the elevation of tympanomeatal flap, bone over the incudostapedial joint was curetted/drilled out to expose the incudostapedial joint and other vital structures like stapes footplate, facial canal, stapedius tendon and promontory. On exploration, facial nerve found on floor of medial wall of middle ear and confirmed by using nerve monitor.

The stapes was not visible and absent along with the footplate. Round window visualized and misplaced at lower position. The procedure was terminated and closed. In postop, we advised hearing aid for the patient.

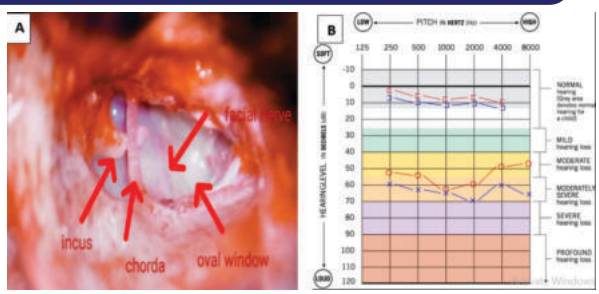

Fig1A&B. Introperative Picture and Preoperative Audiogram

DISCUSSION

During intrauterine development, development of facial nerve started at fourth week of gestation. At six weeks, the stapes primordium pushes facial nerve posteriorly thus horizontal and vertical portion of facial nerve develops. At eight weeks of gestation, the course of facial nerve determined[2]. Dickinson et al.[3] concluded that facial nerve present over promontory can be injured during surgery. In up to 0.2-2% of cases ectopic facial nerve can covers the oval window[4,5]. Facial canal dehiscence and ectopic facial nerve can be found as non-specific finding and anomalous facial nerve can cause conductive hearing loss[6,7,8]. T. Inagaki et al.[9] Concluded that during stapes surgery anomalous facial nerve can encountered in stapes surgery. Rajph J. Caparosa et al.[10] demonstrate that anomalous facial nerve and stapedial anomaly found on exploratory tympanotomy. K.A. Al-Mazrou et al.[11] concludes conductive hearing loss can be due to ossicular deformity and/or facial nerve anomaly and intra operative nerve monitoring play a vital role for safe surgery.

CONCLUSION

Anomalous facial nerve and stapedial agenesis is a rare

entity, can be diagnosed only on exploratory tympanotomy. Intra operative nerve monitoring can be used for confirmation of facial nerve and to avoid complications.

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