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Management of Facial nerve Paralysis due to Chronic Otitis Media: A Case Report

KEYWORDS: chronic suppurative otitis media, facial nerve paralysis, surgical decompression

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ABSTRACT *A 45-year-old female presented with bilateral chronic suppurative otitis media since 1 year and right facial paralysis (House-Brackmann grade IV) since 4 days. Examination showed a conductive hearing loss and CT scan showed soft tissue opacity in the right middle ear cavity with probable erosion of the tympanic segment of fallopian canal. Modified radical mastoidectomy (canal wall down type) with complete removal of granulation tissue from the middle ear, anterior and posterior epitympanum, aditus and mastoid antrum was performed. There was no evidence of cholesteatoma. The patient had high surgical gain and a marked improvement in facial nerve function (House Grade I) one month postoperatively was seen. The present case highlights the need of early surgery for decompression of facial nerve to prevent irreversible damage.*

Case report

A 45 year old female presented with facial asymmetry of 4 days duration along with h/o discharge from both ears (off and on) since the past one year. Examination of both ears revealed small central perforation and scanty mucopurulent discharge. It was associated with hearing loss. Tuning fork test showed bilateral conductive hearing loss (PTA: right ear 50dB, left ear 20dB). Examination of face revealed a lower motor neuron type of facial paralysis (House-Brackmann grade IV) [1] involving the right side. CT scan of the temporal bone revealed soft tissue opacity in the right middle ear cavity with suspicious erosion of lateral wall of tympanic segment of right facial nerve canal. The neutrophil count was found to be 80%. The other parameters were within normal limits.

The patient was put on conservative treatment with intravenous ceftriaxone (1g BD), oral steroids (prednisolone 1 mg/ kg body weight in 3 divided doses) and oral acyclovir (200mg 5 times a day). Patient was followed up for 5 days during which there was no improvement in the degree of facial nerve paralysis.

The patient was subjected to mastoid exploration under general anaesthesia. Modified radical mastoidectomy (MRM; canal-wall-down type) was done. There was presence of florid granulation tissue in the middle ear, attic, aditus and antrum; however no evidence of cholesteatoma was seen under the operating microscope. The granulation tissue was pale in appearance. Examination of the ossicles revealed erosion of the long process of incus along with partial erosion of the head of stapes with discontinuity of the incudostapedial (IS) joint. Granulation tissue was removed completely; there was no dehiscence of facial canal. Facial nerve decompression was done without epineural incision in the tympanic segment. Diseased ossicles were removed and incus was reshaped and placed over the stapes head. The atelectatic drum was removed, which resulted in a subtotal perforation. Concal cartilage was harvested and placed in the middle ear in palisades and temporalis facia graft was placed.

There was marked improvement in the facial nerve paralysis (House grade I)[1] in the immediate postoperative period. The patient was followed up after one month and showed complete recovery of the facial nerve functions (House grade I)[1].

Discussion

Facial nerve paralysis is an uncommon but significant complication of chronic suppurative otitis media. It has decreased significantly with the use of newer diagnostic tools and effective antibiotics, but it still continues to be challenging to the physician. The frequency of facial nerve paralysis in chronic otitis media may range from 0.16 to 5.1% [2].

The mechanism of facial nerve paralysis is not fully understood. It is often associated with dehiscence in the fallopian canal [3] which was absent in our case. Some of the proposed etiologic factors may be osteitis, bone erosion, external compression, edema and inflammation of the nerve by bacteria or neurotoxins [4] .

Facial nerve paralysis due to chronic otitis media may present either abruptly or gradually. Our case had an abrupt presentation and had high neutrophil counts, which indicates an acute infectious exacerbation. Gradual onset results most commonly due to compression from cholesteatoma [5].

Patients with facial palsy as a result of chronic otitis media should be operated on as early as possible without regard to the severity of facial function, presence of cholesteatoma, type of onset, age of the patient and any previous otologic surgical history. The duration of onset of facial palsy to the time of surgery is important, as longer durations lead to severe deterioration of the facial nerve and poor surgical outcomes [6](Ikeda et al, 2006).

Modified radical mastoidectomy with canal wall down procedure is the most common surgical technique used for eradication of disease as well as facial nerve decompression. This ensures removal of extensive cholesteatoma and granulation tissue. [7].

High surgical gain is defined as improvement in facial function by two or more grades by House-Brackmann grading system after surgery [1,6]. Good recovery is seen in cases of chronic suppurative otitis media with short duration of onset of facial nerve paralysis, absence of previous surgery, non-cholesteatomatous inflammatory granulation tissue and a healthy bony labyrinth [4] ,all of whom were seen in our case.

The present case highlights the importance of semi-emer-

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gent surgery in the management of chronic suppurative otitis media when facial nerve paralysis supervenes.

Fig.1. Preoperative photograph showing right facial palsy

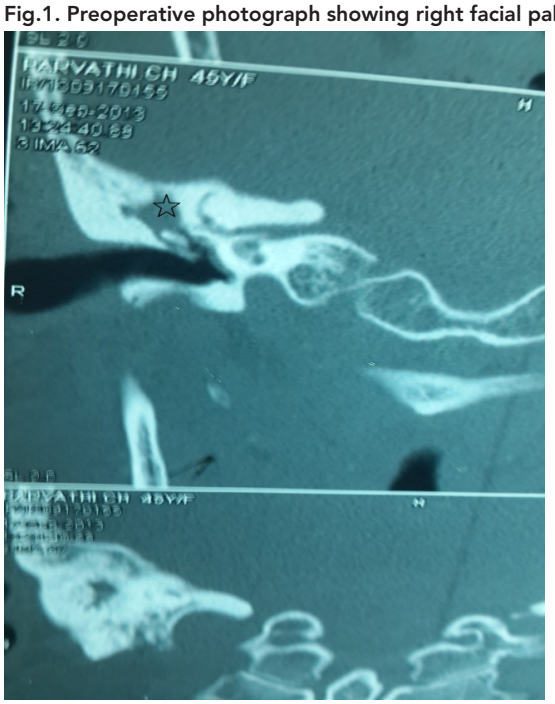

Fig.2. CT scan of temporal bone (coronal cut) showing an epitympanic mass (marked with *)

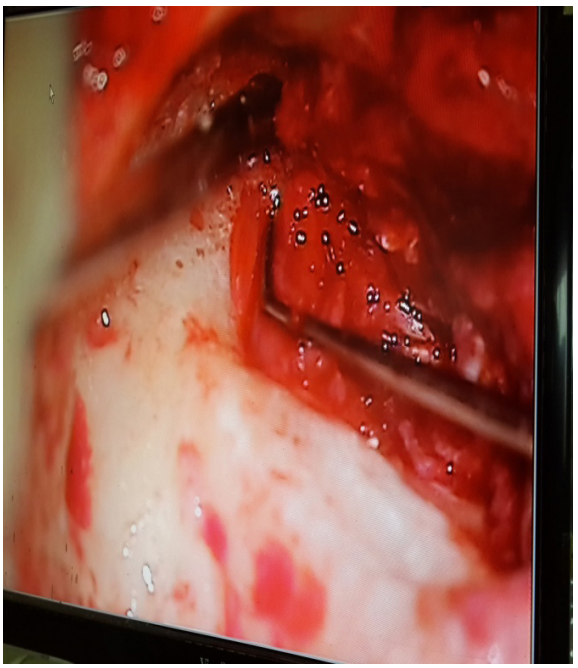

Fig.3. Intra-operative photograph of facial nerve decompression

Fig. 4. Post-operative (one month) photograph

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