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Case report

Facial nerve neuroma in the geniculate ganglion extending into the internal auditory canal: A case report

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ABSTRACT

Facial nerve schwannoma is a very rare benign tumor representing less than 1% of intrapetrous lesions. Our patient is a forty-one year old female who has suffered from recurrent right facial palsy for the last six years. She was first misdiagnosed as having Bell's palsy and received corticosteroids which resulted in little improvement. She then had facial nerve decompression surgery which resulted in a partial improvement. Since then, she has suffered from recurrent attacks of facial palsy. Two years ago, she came to our hospital seeking further treatment options. The final diagnosis made by MRI was a possible facial nerve tumor. To obtain a better facial outcome, total tumor removal was performed through the middle cranial fossa approach along with facial-hypoglossal nerve end-to-side anastomosis through transmastoid approach. Her hearing was preserved, and she obtained a better facial outcome than that of her preoperative level. In conclusion, facial nerve schwannoma has the potential to be misdiagnosed as Bell's palsy which might lead to a delay in diagnosis, and end-to-side neurorrhaphy may be an effective alternative in a selected case.

1. Introduction

Primary tumors of the facial nerve are relatively uncommon. They represent about 0.8% of all intrapetrous mass lesions [1]. They arise from any Schwann cells along the course of the facial nerve from cerebellopontine angle to its extracranial branches [2], with no predilection for a specific gender or age group. Facial nerve schwannomas can present a variety of symptoms including facial palsy, conductive hearing loss or sensorineural hearing loss, depending on its location [3].

Facial palsy is the most common symptom, often with insidious onset [4]. The recent radiological techniques have increased the rate of detection especially when symptoms dictate a high likelihood of facial nerve schwannoma [5]. There is still controversy regarding the treatment of this tumor. We will present a new case report of geniculate ganglion schwannoma extending into the internal auditory canal (IAC), and we will describe the treatment and the long term outcome of facial nerve reconstruction.

2. Case presentation

Six years ago, a 41-year-old female suffered from water leakage at the corner of her mouth and an inability to close her right eye. She consulted her local otolaryngologist and was diagnosed as having a complete right-sided facial palsy

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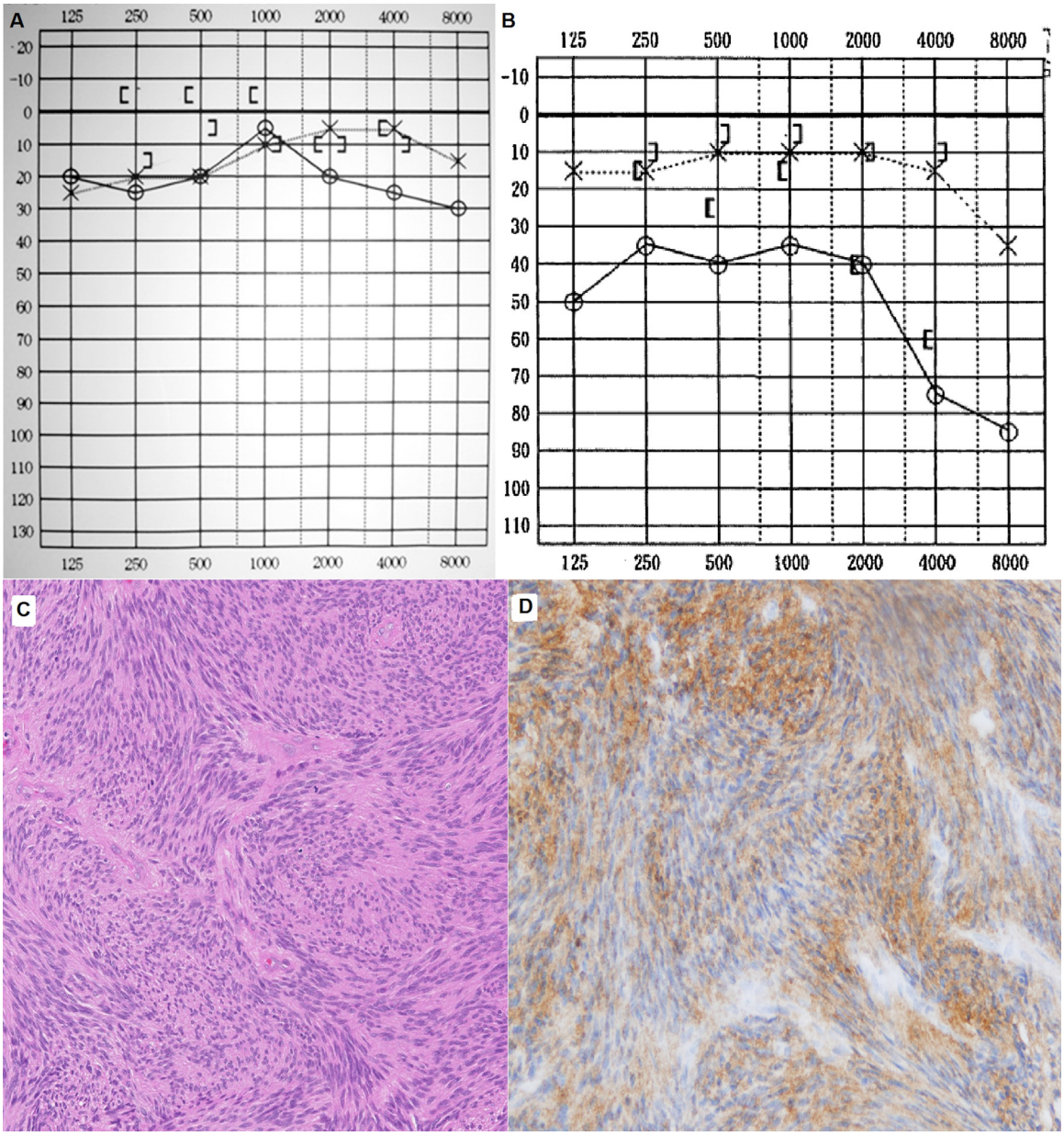

Fig. 1. (A) Preoperative PTA showing normal hearing on the left side and right mild conductive hearing loss with an air-bone gap of 12.5 dB, (B) postoperative PTA indicates that the hearing was fairly well preserved, (C) hematoxylin and eosin staining showing areas of hypercellularity featuring cigar shaped nuclei with nuclear palisading (Antoni type A), and areas of hypocellularity (Antoni type B), (D) S-100 stain showing positive staining.

(House-Brackmann Grade: VI). Her electroneurography (ENoG) value was 28%. She received corticosteroids treatment. On follow up, she did not show any signs of recovery, so she was advised to have a decompression surgery for the mastoid part of the facial nerve. After decompression, her facial function improved up to nearly House-Brackmann Grade III.

Since then, she had repeated attacks of facial palsy with a worsening of her facial function. Two years ago, the patient sought a consultation of another institution. There MRI scanning revealed a possible facial nerve tumor. Then, she was referred to our institution for surgical intervention. Her examination revealed right facial palsy (House-Brackmann grade IV). Both tympanic membranes were normal. Pure-tone audiometry indicated mild conductive hearing loss in the right ear with air-bone gap 12.5 dB [Fig. 1A]. The acoustic reflex was absent on the right side.

Computerized tomography scanning [CT] showed a soft-tissue mass involving the geniculate ganglion and the labyrinthine portion of the facial nerve [Fig. 2A, B]. T1-enhanced magnetic resonance imaging [MRI] revealed a dumbbell-shaped mass with high-signal intensity in the same location. The mass extended into the internal auditory canal with slight extension into the cerebello-pontine angle [Fig. 2B, C].

The patient desired to receive a radical treatment and facial recovery. She underwent surgery in collaboration with neurosurgeons. Total tumor removal was achieved through middle cranial fossa [MCF] and transmastoid approaches. The

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