Aberrant Facial Nerve Exposed behind the Eardrum
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Otolaryngology -- Head and Neck Surgery 2012 147: 1158 originally published online 25 September 2012
DOI: 10.1177/0194599812462010

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Version of Record - Nov 28, 2012
OnlineFirst Version of Record - Sep 25, 2012
What is This?
A 20-year-old man was referred to us with left-sided conductive hearing impairment since his childhood. Otoscopic examination revealed a stenotic meatus despite a normal-looking pinna. What impressed us was the pearly white bundle-like structure located directly behind the eardrum and next to the edge of the posterior canal wall (Figure 1).

Accordingly, an exploratory tympanotomy was performed. Elevating the tympanomeatal flap to the end of the canal wall revealed a nerve-like bundle (Figure 2), which was confirmed to be the descending facial nerve by electrical stimulation monitoring. Because of concerns that the dehiscent facial nerve may be vulnerable, the patient was not eligible for further surgical intervention to correct his unilateral conductive hearing loss in such atresia condition. The Tri-Service General Hospital institutional review board deemed this report exempt from review because it is not a research study.

Discussion

The facial nerve lying right behind the eardrum is rare. The photo in Figure 1 highlights an interesting finding that the hypoplastic tympanic ring misdirected the opening of the external auditory canal more posteriorly, which would significantly contribute to exposing the descending facial nerve more laterally as shown in this image. Previous reports addressing the above condition often involve a deformed auricle, such as severe forms of microtia.1,2 Our case showed no significant abnormality in the auricle. This is not common.

Keywords
facial nerve, external auditory canal, aural atresia, eardrum

Figure 1. Otoscopic examination reveals 1 bundle-like structure (asterisk) behind the eardrum. P indicates posterior canal wall; A, anterior canal wall.

Figure 2. By elevating the tympanomeatal flap and accessing the middle ear, a dehiscent mastoid portion of facial nerve (arrows) was found adjacent to the posterior canal wall. P indicates posterior canal wall; T, anteriorly elevated tympanomeatal flap.
Facial canal dehiscences are most frequently encountered at the tympanic portion near the oval window region.\textsuperscript{3,4} A dehiscent descending facial nerve undoubtedly increases the risk of injury during surgery. Rarely, it may come out of a junction in the underdeveloped tympanic ring and mastoid process and result in prompt exposure following a skin incision.\textsuperscript{5}

Although various facial nerve anomalies are commonly seen in patients with congenital aural atresia, this particular anomaly observed by otoscopic examination in this reported case has seldom been seen in the literature.

**Author Contributions**

Chao-Yin Kuo, data collection and draft preparation; Chih-Hung Wang, manuscript editing.

**Disclosures**

**Competing interests:** None.

**Sponsorships:** None.

**Funding source:** None.

**References**