

Intralabyrinthine Lipoma

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ABSTRACT

A 26-year-old man was admitted to our clinic with approximately 8 years history of hearing loss on the right side. The pathological findings were not found in the neuro-otological examination. Severity sensorinoral hearing loss (SNHL) was determined on the pure tone audiometry. The magnetic resonance imaging (MRI) and computed tomography (CT) were shown that the lipomatous lesion involved right cochlea, semicircular canal and internal auditorium canal. Intralabyrinthine lipoma was diagnosed via fat suppression techniques with MRI on T1-weighted images. The patient followed with MRI because he had just SNHL and the lesion minimal involved internal auditory canal.

Key words: Cochlea, intralabyrinthine lipoma, internal auditorium canal, semicircular canal.

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ÖZET

Yirmialtı yaşında erkek hasta kliniğimize 8 yıldır sağ kulağında işitme kaybı şikayeti ile başvurdu. Yapılan nörootolojik muayenesinde patolojik bir bulguya rastlanılmadı. Pür ton odyometri testinde ileri derecede sensörinöral işitme kaybı tespit edildi. Magnetik rezonans (MR) ve bilgisayarlı tomografide sağ kohleayı, semisirküler kanalı ve internal akustik kanalı etkileyen lipomatöz lezyon tespit edildi. T1 ağırlıklı magnetik rezonans görüntülemesinde yağ supresyon testinin pozitif olması üzerine intralabirentin lipom tanısı konuldu. Lezyonun internal akustik kanala uzanması ve sadece sensörinöral işitme kaybına neden olması nedeniyle hastanın takibine karar verildi.

Anahtar kelimeler: Kohlea, intralabyrinthine lipoma, internal auditorium kanal, semisirküler kanal

INTRODUCTION

Intracranial lipomas are uncommon, occurring in only 0.08% of general autopsies, while 0.1% of all brain tumors (1,2). The pathogenesis of intracranial lipomas can explain persistence and maldifferentiation of primitive meninx primitiva (3). Lipomas are the most common located in the corpus callosum. However, the lesion is extremely rare located in the cerebellopontine angle, internal auditory canal and intravestibular area. The first the cerebellopontine angle lipoma was described by Klob in 1859 (4). Huang was reported that intravestibular lipoma was dis-

covered during destructive surgery for disabling vertigo in a case (5). In 1989, Dahlen et al. were determined five cases of vestibular lipoma. They presented the computed tomography (CT) and magnetic resonance imaging (MRI) characteristics of lipomas within the vestibule of the inner ear. Three of the cases were associated with lipoma of the cerebellopontine angle (6). We presented a case with intralabyrinthine lipoma involved cochlea, semicircular canal and internal auditory canal.

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CASE

A 26-year-old man was admitted to our clinic with approximately 8 years history of hearing loss on the right side. The pathological findings were not found in the neuro-otological examination. Severity sensorinoral hearing loss (SNHL) was determined on the pure tone audiometry. Type A tympanogram and negatively acoustic reflex were found on the tympanometry. CT showed low density (fat tissue attenuation) in right cochlea and semicircular canals. On MRI, the lesion has high-signal intensity on T1-weighted images. The lesion involved cochlea, semicircular canal and internal auditorium canal on the right side (Figure 1). Fat suppressed T2 and T1-weighted images showed suppressed signal in fat containing areas (Figure 2-3). Intralabyrinthine lipoma was diagnosed in the case according to MRI findings. The patient was followed with MRI because he has just SNHL and the lesion minimally involved internal auditory canal. The patient was followed with MRI because he has just SNHL and the lesion minimally involved internal auditory canal.

DISCUSSION

Intravestibular lipoma is a rare congenital lesion and often associated with lipoma in the cerebellopontine angle (6). The lesion can result in unilateral hearing loss and therefore be discovered while searching for the more common acoustic schwannoma, congenital cholesteatomas, cholesterol granulomas, meningiomas, hemangiomas. MRI findings are helpful in separating lipomas from other tumors in this region: MRI reveals a nonenhancing, often heterogeneous, hyperintense signal on T1-weighted images and hypointense or isointense signal on T2 weighted images. Fat suppression T1 weighted images which suppress the strong signals from fat that can interfere with signals from nearby tissue. In contrast, schwannomas show strongly enhancing, homogeneous, and isointense signal on T1 and T2 weighted images. They show no decrease or signal intensity with fat suppression techniques (2,7-9). CT finding of lipoma is mass of very low density, but not specific of lipoma as this may also be seen in acoustic schwannoma and cholesteatomas (2,3,6).

Intracranial lipomas are usually pericallosal asymptomatic midline lesions (10). Symptomatic lesion is very rare, and symptoms differ according to the location of the lipoma. Persistent headaches, convulsions, psychomotor retardation and cranial nerve defects may occur (11).

However, in our case, there was just SNHL on the right side. Dohlen et al. reported that five patients with intravestibular lipomas displayed unilateral SNHL, which correlated to the side of the lipoma (6).

Intracranial lipomas are composed of soft, lobulated, yellow, fatty-appearing tissue. The lesion is difficult to dissect from the adjacent nerves because the growth pattern is infiltrative rather than expansive (12). Many patients have postoperative deficits, most often hearing loss (3). Cases with rapid progress or malignant transformation have been no reported (11). Because of the slow development of lipomas and the difficulties in their removal, a more conservative approach, such as observation of the lesion by MRI and CT, is suggested (1-3). In the present study, the patient followed with MRI and CT because he had just SNHL and internal auditory canal minimally involved with the lesion.

In the literature, intracranial lipomas in a variety of locations, such as internal auditory canal, cerebellopontine angle and intravestibular, were reported (1-5,13-15). In the present case, as different from these cases, intralabyrinthine lipoma involved cochlea, semicircular canal and internal auditory canal was determined. Therefore, intralabyrinthine or intracranial lipomas beside of acoustic schwannoma can be suspected in the case with unilateral SNHL and fat suppression technique on the MRI can be performed for differential diagnosis.

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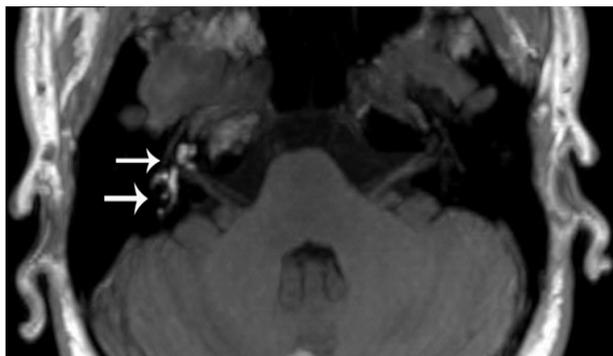


Figure 1. Axial T1-weighted MRI demonstrates high signal lipomatous lesion in the right side cochlea, semicircular canal and internal auditory canal (white arrows).

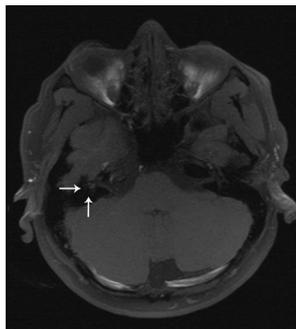


Figure 2. Axial FAT-SAT T1-weighted MRI shows fat signal suppression completely of perilymph within the right side cochlear and semicircular canals (white arrows). That feature differentiate the lesion from hemorrhage.

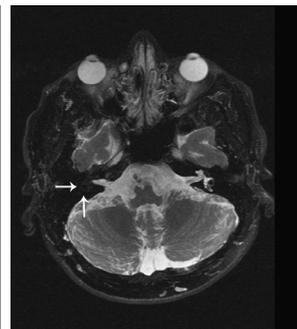


Figure 3. Axial FAT-SAT T2-weighted MRI shows decrease signal suppression completely of perilymph within the right side cochlear and semicircular canals (white arrows). Image shows complete signal suppression.

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