



Isolated middle ear meningioma

İzole orta kulak meningiomu

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ABSTRACT

Meningiomas are slowly progressive, benign tumors that originate from meningotheelial cells. Extracranial meningiomas, especially isolated middle ear meningiomas, are very rare. In this article, we report a rare secretory type primary middle ear meningioma which was histopathologically confirmed in a 46-year-old female patient who presented with otological and neurootological symptoms.

Keywords: Chronic otitis; isolated; meningioma; middle ear.

ÖZ

Meningiömlar, meningoteliyal hücrelerden köken alan yavaş seyirli, benign tümörlerdir. Ekstrakraniyal meningiömlar, özellikle izole orta kulak meningiömları, oldukça nadirdir. Bu yazıda, otolojik ve nörootolojik semptomlarla başvuran 46 yaşındaki bir kadın hastada histopatolojik olarak teyit edilen nadir, sekretuar tipte primer orta kulak meningiömu sunuldu.

Anahtar Sözcükler: Kronik otit; izole; meningiömu; orta kulak.

Meningiomas are slowly progressive, benign tumors that originate from meningotheelial cells. They make up nearly 18% of primary intracranial tumors.^[1] Rare extracranial meningiomas (2%) can be seen mostly in the head and neck area, especially the sinonasal area, the ear and the temporal bone.^[2,3] Primary middle ear lesions without an intracranial component are very rare. In this case study, a rare secretory type primary middle ear meningioma that was histopathologically confirmed is shown in a patient with otological and neurootological symptoms.

CASE REPORT

A 46-year-old female patient consulted the Otorhinolaryngology outpatient clinic with aural fullness, hearing loss and dizziness. The patient's medical history revealed that she had a ventilation tube application because of serous otitis media one year ago. Tympanogram analysis that was done at the time was reported to be type B. Otomicroscopic examination performed in our clinic showed that the right tympanic membrane was intact with a fullness that reflected a pink color. This imagery resembled a mass behind the tympanic



membrane. Nasopharyngeal examination was normal. Other otorhinolaryngological examinations showed no pathology. Computed tomography of temporal bone revealed the right ossicular chain was slightly eroded and there was some soft tissue density in the tympanic cavity. Audiometric examination revealed that compared to pure sound average, the patient had normal levels on the left ear and a light mixed hearing loss in the right ear. Tympanoplasty under general anesthesia was performed because of these symptoms, and during the surgery some soft-tissue related to the tympanic membrane around the ossicle was observed (Figure 1). The incus was slightly eroded. Soft tissue behind the tympanic membrane and middle ear was totally excised. Type 2 tympanoplasty was completed after ossiculoplasty. A written informed consent was obtained from the patient.

Histopathology revealed a tumoral infiltration that was made up of meningotheelial cells that were locally vortexed. Tumor cells stained positive for periodic acid schiff (PAS) (Figure 2) and showed intracellular eosinophilic, homogenous, round-shaped inclusions. Immunohistochemical staining showed tumor cells were positive for epithelial membrane antigen (EMA) (Figure 3) and progesterone. The case was reported to be a secretory meningioma. There were no symptoms of relapse during the postoperative eight-month follow-ups.

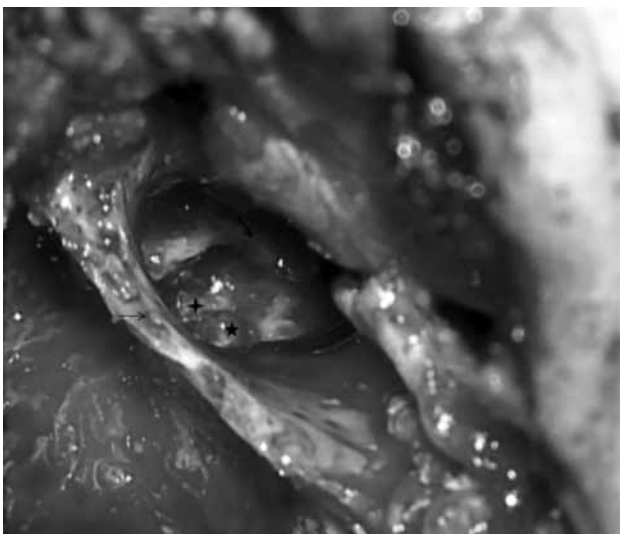


Figure 1. Intraoperative view, marks show the manubrium mallei, stapes, posterior wall of external ear, and soft tissue (meningioma).

DISCUSSION

Meningiomas are slowly progressing, benign tumors that originate from dura. They make up approximately 13-26% of all primary intracranial tumors.^[4] Many temporal meningioma patients with otological and neurootological symptoms have vertigo, hearing loss, tinnitus, aural fullness and ear discharge.^[5,6] Our patient consulted the clinic with vertigo and aural fullness. In a case series where meningioma diagnosis was delayed due to a primary diagnosis of otitis media,^[7] serious discharge attacks were found to be the general symptom after the application of a ventilation tube. Our patient had a ventilation tube applied one year ago, but she did not have the discharge symptom.

Audiological examination was reported to be in the normal range in some cases,^[8] but

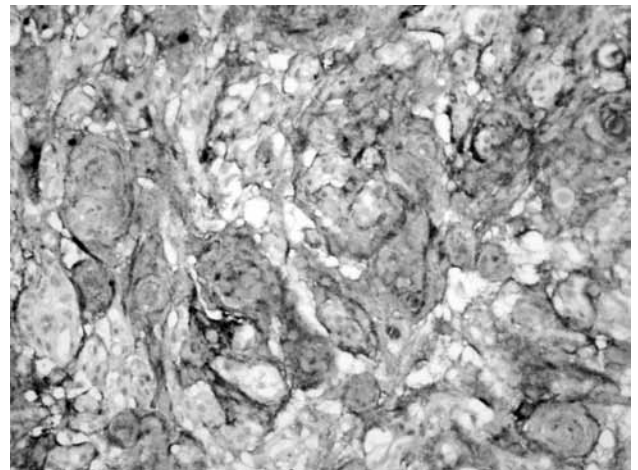


Figure 2. Secretory meningioma (H-E x 400).

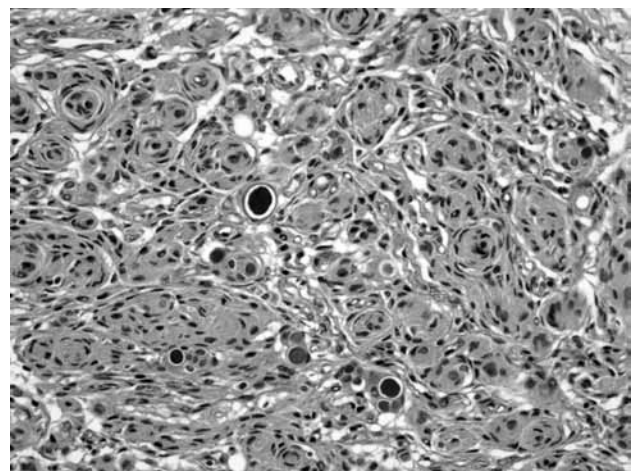


Figure 3. Secretory meningioma (PAS x 400).

was reported to be conductive hearing loss in others.^[6] Our patient's audiometric examination revealed a slight mixed hearing loss. The primary examination to safely understand the size and borders of a temporal meningioma is gadolinium magnetic resonance imaging.^[4] Computed tomography is not a good method to observe meningioma but was applied to our patient who we thought to have middle ear pathology.

Meningiomas are usually benign. However, some cases may have malignant transformation. The World Health Organization classification suggests grade 1 to be benign, grade 2 to be atypical and grade 3 to be anaplastic. It was observed that transitional grade 1 meningiomas are related to extracranial meningiomas.^[3] Our patient was diagnosed with a rare secretory (grade 1) meningioma after the specimen was examined histopathologically. Definitive diagnosis is usually confirmed pathologically and the treatment is total excision.

Secretory meningioma is a very rare variant and in a study the rate of incidence was reported to be 3% in all meningiomas.^[9]

The most outstanding feature of secretory meningiomas is epithelial differentiation with secretory materials seen as hyaline inclusions. The intracellular, eosinophilic inclusions in meningiomas are defined as pseudopsammoma bodies. These bodies could be in different sizes, and are round-shaped deposits that are positive for PAS and that react positively for carcinoembryonic antigen, EMA and cytokeratin on immunohistochemical examination.^[10] In our case, the morphological and immunohistochemical findings were similar.

Although meningioma prognoses are good, their recurrence rate ranges between 7-84%.^[11] Long-term close follow-ups are important.^[12] Our patient had a lesion that was mostly located around the ossicular chain and closely related to the tympanic membrane. The soft tissue was totally excised during surgery and diagnosed definitively with a pathological examination. Eight month follow-up revealed no relapse.

In conclusion, isolated middle ear meningiomas are rarely observed situations.

They can be differentiated from other middle ear pathologies by histopathological examination. Although rare, in patients with otological and neurootological symptoms that have middle ear mass lesions, meningiomas should be considered. Furthermore, diagnosed patients have to be followed-up for a long period to rule out relapse.

Declaration of conflicting interests

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