

Foreign Body Polyp of the External Auditory Canal Mimicking Suppurative Otitis Media: Case Report

Dış Kulak Yolunda Supuratif Otitis Mediyayı Taklit Eden Yabancı Cisim Polibi

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ABSTRACT Aural polyp is an inflammatory mass that typically presents within the external auditory canal and may be of either external or middle ear origin. The most common cause of aural polyps in children is chronic otitis media with or without cholesteatoma. This paper presents a child with a giant aural polyp that was induced by a long-time present foreign body in the external auditory canal. The special feature in this case was that, the giant aural polyp had hidden not only the foreign body, but also the silent mastoiditis that had developed from coincidentally co-existing chronic otitis media with effusion.

Key Words: Foreign bodies; mastoiditis; polyps; otitis media with effusion

ÖZET Aural polipler tipik olarak dış kulak yolunda görülen inflamatuvar kitlelerdir. Orta kulak veya dış kulak yolundan kaynaklanabilirler. Aural poliplerin çocuk yaş grubunda görülen en sık nedeni kolestatomlu veya kolestatomsuz kronik otitis mediadır. Bu yazıda bir çocukta dış kulak yolunda uzun süredir var olan ve yabancı cisme bağlı olarak gelişen dev aural polibi sunduk. Bu dev aural polip sadece yabancı cisim değil, rastlantısal olarak birlikte olan kronik efüzyonlu otitis media sonucu gelişmiş sessiz otitis media tablosunu da gizlemiştir.

Anahtar Kelimeler: Yabancı cisimler; mastoidit; polip; otitis media efüzyonlu

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Aural polyp is an inflammatory mass that typically presents within the external auditory canal (EAC) and may be of either external or middle ear origin. In adults, aural polyps often represent an irritative response to chronic otitis media (OM) but may herald the presence of cholesteatoma or other significant diseases. Little information exists as to the differential diagnosis of aural polyps in the pediatric age group. The most common cause of aural polyps in children is chronic OM, with or without cholesteatoma.^{1,2}

Gliklich et al reviewed 35 pediatric patients presenting with primary aural polyps and found 43% with the diagnosis of chronic suppurative OM, 29% with cholesteatoma, 23% with retained ventilation tubes (foreign body), and 5% with other reasons (1 had tuberculosis, and 1 had Langerhans' cell histiocytosis).²

This paper presents a child with a giant aural polyp that was induced by a long-time present foreign body in EAC. The special feature in this case was that the giant aural polyp had hidden not only the foreign body, but also the silent mastoiditis that had developed from coincidentally co-existing chronic OM with effusion.

CASE REPORT

A 5-years old male living in a rural area presented to the outpatient clinic with bloody-inflamed aural discharge for 3 months, and a mass in the EAC. His medical history revealed that he has had purulent discharge of both ears frequently over the last 2 years, and had many times received systemic and topical antibiotics in various medical centers due to chronic OM. Meanwhile, during the last year, a hearing loss had developed in both ears, but mostly in the right ear.

Physical examination revealed bilobulated polypoid mass that completely filled the right EAC with a pale pink color and slightly bloody appearance. In the otoscopic and microscopic examination of the left ear, the tympanic membrane was perforated 3 x 3 mm in the central part of the lower quadrants of the pars tensa. Tympanic cavity mucosa was dry. Both of the mastoid areas were normal on palpation. In the pure tone audiogram, mean pure tone average was 40 dB on the right side and 23 dB on the left side. In the axial plane temporal bone computerized tomography (CT), soft tissue density was detected completely in the EAC and partially in the tympanic cavity in the right ear. The mastoid air cells and antrum was filled with soft tissue in the right ear. In the tympanic cavity, ossicles were intact but surrounded by the soft tissue (Figure 1).

An incisional biopsy was taken from the polypoid mass in the right EAC. The histopathological examination yielded inflammatory polyp. The medical history and the results of the physical, audiological, CT and histopathological evaluations showed that it was a bilateral chronic OM with a polyp on the right-side.

The right ear was operated under general anesthesia via retroauricular approach and complete



FIGURE 1: The mastoid air cells and antrum was filled with soft tissue in the right ear. In the tympanic cavity, ossicles were intact but surrounded by the soft tissue.

mastoidectomy was performed. Complete mastoidectomy is performed. The mastoid air cells and antrum were filled by granulation tissue. The aditus ad antrum was blocked by hypertrophy of the mucosal lining.

During the removal of the polyp, a foreign body was noticed below the polyp tissue. The foreign body was a 20 x 5 mm piece of wood. It was embedded in the epithelium of the EAC. It was obliquely placed from the anteroinferior to the posterosuperior direction between the annulus tympanicus and isthmus level. The tympanic membrane was intact, but thick and stiff. The bilobulated polyp with a single peduncle and a surrounding granulation tissue around the peduncle originating from the isthmus level (Figure 2).

A tympanomeatal flap was elevated. On entrance, the tympanic cavity mucosa seemed slightly edematous. The ossicular chain was intact and mobile. Assuming that the middle ear and the mastoid symptoms were suggesting chronic OM with effusion, a ventilation tube (Medtronic Xomed Fluoroplastic, 1,14 mm, Shepard Design) was inserted into the tympanic membrane. Histopathological report of the postoperative specimen showed inflammatory polyp (Figure 3). In the postoperative first



FIGURE 2: Macroscopic view of the polyp and foreign body (piece of wood).

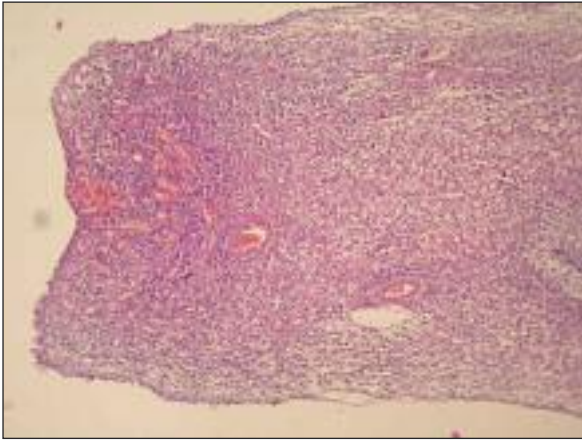


FIGURE 3: Histopathologic view of the patient's specimen: proliferating small vessels, chronic inflammation (HE, x100).

year, the ventilation tube was in its place and no polyp relapse was observed. The pure tone audiogram, mean pure tone average was 27 dB on the right side and 25 dB on the left side.

DISCUSSION

The pathophysiology of aural polyp or granulation tissue around foreign body is not clear. A potential mechanism proposed by Hawke and Keene suggests that polyp formation in such circumstances represents a foreign body granuloma reaction to trapped squamous epithelium around the ventilation tube rather than to the tube itself.² Fore-

ign body granulomas and aural polyps have also been described in relation to many materials including cotton balls, wood pieces, electrical cap, hair and talc.³

In the present case, peduncle of the polyp and the surrounding granulation tissue had originated from the isthmus level of the epithelium in which the foreign body was embedded. We suggest that the polyp was the result of the irritative response against the foreign body.

There was no evidence, in the history of the patient, about when and how this foreign body had entered. After the operation, a second interview was done with the mother. According to her, the boy had fallen down on to some wooden heap from a height of 150 cm a year ago, a very slight hemorrhage from the right ear had been noticed by the mother, however, they had not asked for any medical help. We were unaware of the accident initially. Besides, because the wood is radiolucent, we could not guess the real reason of the polyp preoperatively.

Paperalla et al suggested that OM with effusion might progress over time to more advanced pathologic conditions as granulation tissue, cholesterol granulomas, or cholestatoma. These chronic pathologic changes in the middle ear space and/or the mastoid cavity may be observed behind an intact tympanic membrane and significant, even lethal middle ear infections may go undetected clinically in the pediatric population.⁴ This condition is called silent mastoiditis which has also been named by different authors as latent or masked mastoiditis. Clinical manifestations of silent OM can include acute exacerbations of OM, labyrinthine fistulae, conductive hearing loss, sensorineural hearing loss, and other less likely temporal bone or intracranial complications.^{4,5}

The treatment of mastoid cavity should not be ignored in the treatment of OM with effusion. The mastoid cavity is not a separate space and as long as the tympanic membrane is intact, the only direction in which the inflammation and secretion will spread, is through the aditus to the mastoid antrum. The neighbouring air cells are drawn into the

infectious process either by gradual spread of infection from one air cell to the other, or by blockage of the aditus.⁶ If an attic blockage (by adhesions, granulation tissue, fibrosis, cholesteatoma) isolates the mastoid from the tympanic cavity, the 2 spaces may begin to act independently. After antibiotic treatment, acute infection may become silent within the mastoid and at the same time, tympanic cavity may appear inactive. Mastoidectomy may be the effective way to achieve a dry, normal functioning middle ear in such patients.⁵

In our case, independent from the giant EAC polyp, this case of a silent mastoiditis limited only in the mastoid cavity, resulting from a chronic OM with effusion was a surprise for us.

When large polyps or granulation tissue fill the EAC, it is important to remember that malignant lesions may mimic inflammatory disease and they may coexist.^{5,7} Other rare causes of aural polyp include granulomatous diseases (Tuberculosis, Wegener's granulomatosis), fungal infection, and acquired immunodeficiency syndrome.^{2,3,8}

CONCLUSION

Aural polyp and chronic OM may occur together frequently. However, especially in children, the possibility of foreign body should always be considered in the etiology and the polyp that has completely obstructed the EAC may hide multiple pathologies.

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