CASE REPORT

Keratosis Obturans: A Perilous Disease?

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ABSTRACT

Aim: To find out the extent of simple disease like keratosis obturans and possible complications it can give rise to.

Background: Keratosis obturans was first properly described and named by Wreden of St. Petersburg in 1874, who distinguished the condition from that of impacted wax (which was then called ceruminosis obturans). Keratosis obturans is the accumulation of a large plug of desquamated keratin in the external auditory meatus. It is thought that keratosis obturans is due to abnormal epithelial migration of the ear canal skin. We are presenting a rare case of keratosis obturans with lateral semicircular canal fistula.

Case description: A 56-year-old female presented with right ear discharge since 15 days and giddiness with vomiting since 5 days with past history of right ear discharge since 5 years. Clinical examination revealed keratin plug in right external auditory canal and posterior meatal wall bulge with dull tympanic membrane. Otoendoscopy shows wax with keratin debris and pulsatile discharge. Patient had horizontal nystagmus, gaze evoked with head shake test positive. Fistula sign was negative. High-resolution computed tomography (HRCT) temporal bone showed erosion of lateral semicircular canal and no ossicles. Modified radical mastoidectomy with type 4 tympanoplasty was done. Keratin debris with wax was seen in attic and aditus. Fistula closed using periosteum. Intraoperatively, patient developed facial nerve weakness which recovered postoperatively.

Conclusion: We were able to treat the patient by prompt intervention and diagnosis of the condition resulting in adequate recovery of the patient.

Clinical significance: Keratosis obturans is a rare disease, and the true incidence of this is not known with its natural history and progression. High clinical suspicion and prompt management are important as treatment delay results in serious complications.

Keywords: Fistula, Keratin plug, Keratosis, Nystagmus.

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BACKGROUND

Keratosis obturans was first accurately described and named by Wreden of St. Petersburg in the year 1874, who distinguished the condition from impacted wax (which was then known as ceruminosis obturans). Schofield added alternative terminology, cholesteatoma of the EAC in 1893, which he ascribed to insect sting or bite. Pieperges and Behnke refined the two conditions describing the dissimilarity between the two, which was until then considered diverse presentations of the same disease. It is thought that keratosis obturans is due to irregular epithelial movement of ear canal skin.

This case report describes a rare case of severe keratosis obturans with spread to middle ear and mastoid with erosion of lateral semicircular canal wall.

CASE DESCRIPTION

An otherwise healthy 56-year-old female from Belgaum presented with right ear discharge for 15 days and giddiness with vomiting for 5 days. Patient gives history of right ear discharge for 5 years, which was only one episode and subsided after treatment. The discharge is nonfoul smelling, mucopurulent, and nonblood tinged. Patient gives history of giddiness since last 5 days, which is aggravating on movement of head from side to side and on changing position with minimal relief from medications.

Clinical examination revealed keratin plug in external auditory canal on the right and posterior meatal wall bulge along with dull tympanic membrane (Fig. 1). Otoendoscopy was done, and wax material along with keratin debris was seen behind the plug along with pulsatile watery discharge. Patient further had horizontal nystagmus which was gaze evoked, and head shake test was positive with fast component to left side. Fistula sign was negative. No facial nerve palsy was seen. HRCT temporal bone revealed opacification of right mastoid air cells and middle ear cavity with erosion of lateral semicircular canal wall and no ossicles (Fig. 2).

Patient was started on IV antibiotics and vestibular sedatives, and was planned for canal wall down mastoidectomy. A modified radical mastoidectomy with type 4 tympanoplasty was done for the patient. Intraoperatively, keratin debris along with wax was seen in attic and aditus (Fig. 3). Horizontal segment of fallopian canal was dehiscent exposing the facial nerve. Lateral semicircular canal wall fistula was seen at level of second genu. The fistula was closed using postauricular periosteum followed by cavity which was packed with medicated gelfoam and temporalis fascia graft which was positioned over the footplate (Fig. 4). Intraoperatively, patient developed facial nerve weakness which recovered postoperatively within few hours. Postoperatively, patient had no giddiness and nystagmus subsided within 2 days. Patient was discharged in stable condition. The histopathological examination of keratin debris confirmed our suspicion of keratosis obturans.

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Fig. 1: Preop otoendoscopy photograph showing external auditory canal (R)

Fig. 2: HRCT temporal bone shows comparison of ballooning of EAC (R) along with erosion of anterior and posterior walls seen with lateral semicircular canal (LSCC) erosion

Figs 3A and B: Showing keratin debris along with wax in the middle ear cavity
**Discussion**

Keratosis obturans is the collection of huge wad of desquamated keratin in EAC. It usually presents in younger patients with bilateral presentation. There is marked inflammation of epithelium, but no bone erosion in most of the cases. Thickening and mucosalization of TM may occur. It should be differentiated from primary auditory canal cholesteatoma, in which, there is bony erosion, but tympanic membrane is normal.

**Conclusion**

Keratosis obturans can be benign, but it mutely can result in widespread bony erosions. Tegmen dehiscence, facial nerve palsy, and lateral semicircular canal erosion are rare findings.

**Clinical Significance**

Keratosis obturans is an erratic and extraordinary disease, and the true incidence of these is not known along with their natural history and progression. Hence, high clinical apprehension and hasty management are important as the treatment delay may result in dangerous complications.

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