

Keratoses Obturans: Review Article

Mohammad Mosa Mokhatrish*

Assistant Consultant, Department of Otorhinolaryngology, Prince Mohammed bin Abdulaziz Hospital, Riyadh, Saudi Arabia

Review Article***Corresponding author**Mohammad Mosa
Mokhatrish**Article History**

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Abstract: Keratoses obturans was considered as a variation of external ear canal cholesteatoma for more than century. Over the last 30 years, it has been considered separate entity from external ear canal cholesteatoma. Although they are different disorders, they have shared symptoms and signs. During the articles review, I explore the diagnostic dilemma as well as the management. I found at the end that they are different diseases while the presence of bone expansion rather than osteonecrosis help in the diagnosis of keratoses obturans. In addition, immunohistochemical investigation on keratoses obturans will support the diagnosis.

Keywords: Ear, External, Keratoses, Obturans, Cholesteatoma.

INTRODUCTION

Warden first used the term keratoses obturans in 1874, when he noticed a compact mass in the external ear canal, which is different from impacted wax[1]. However, Toynbee was the first one who described it as a whitish mass in the posterior aspect of the external auditory meatus which he names it as molluscum contagiosum in 1850[2].

Piepergerdes and Behnke differentiate between keratoses obturans and external ear canal cholesteatoma[3]. They define keratoses obturans as keratin plugs accumulation in the ear canal that leads to of the external ear canal widening while in ear canal cholesteatoma, it is squamous tissue at external ear canal posteriorly that causing bone erosion.

As compared to middle ear cholesteatoma, the ear canal cholesteatoma considered rare and maybe this the reason why it is considered alongside keratoses obturans traditionally. In addition, they have shared characteristics that may lead to the wrong diagnosis. Therefore, I have reviewed the literature looking for diagnostic tools helping to differentiate and to diagnose keratoses obturans from external ear canal cholesteatoma, and their treatment.

Diagnostic features of Keratoses Obturans

Piepergerdes *et al.* highlighted the clinicopathological findings[3]. Keratoses obturans patient usually presents with the deafness, sever earach, large ear canal, thick tympanic membrane and rarely otorrhea. These symptoms may be attributed to keratin deposition in the external ear canal. It is associated with bronchiectasis or sinusitis in 77% of pediatric and 20 % of adults[4].

Naiberg *et al.* stated that the pathological findings in keratoses obturans are inflammatory process and dilation of vessels in the subepithelial tissue in medial part of external auditory meatus[5].

Jerzy *et al.* in their study of new immunohistochemical investigation on keratoses obturans showed the presence of cytokeratin (CK 5, 6, 8, 17 and 19) and tenascin. Growth factors EGFR, TGF beta 1, and Ki67 and p53 antigens which are responsible for bony resorption not present[6].

Diagnostic dilemmas

There is an overlap in symptoms and signs of keratoses obturans and external ear canal cholesteatoma. During the literature review, there is no similar way of presentation of both conditions. Jarvis and Bath described an elderly female patient with ear pain and chronic ear discharge associated with keratin mass[7]. They consider the diagnosis as external ear canal cholesteatoma at the beginning but CT scan showed widened external ear canal. When they removed the keratin, there was no sign of osteonecrosis; the final diagnosis was keratoses obturans. Also, other studies confirmed this observation [5, 8]. That is mean an earache and otorrhea are not on all occasions differentiating symptoms. Heilbrun *et al.* reported a conductive hearing loss in 4 cases with external ear

canal cholesteatoma with generalized bone erosion. Hearing loss and bone erosion are not conclusive in the differentiation of external ear canal cholesteatoma from keratosis obturans[9].

After the literature review and meticulous review of reported papers about ear canal cholesteatoma and keratosis obturans, I found that osteonecrosis is the main differentiating sign of external ear canal cholesteatoma from keratosis obturans, and immunohistochemical investigations can support the diagnosis.

Management of Keratosis Obturans

Usually, keratosis obturans produces widening of the external auditory meatus smoothly while nearby structures can be affected minimally. Treatment of this disease conservatively with cleaning in a meticulous way along with regular follow up is successful in most cases.

CONCLUSION

Keratosis obturans and external ear canal cholesteatoma are different disorders. Sometimes it is difficult to differentiate between the two disorders. Osteonecrosis and immunohistochemical investigations help in the diagnosis of both conditions. Keratosis obturans usually managed conservatively with regular cleaning and follow up.

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