INTRODUCTION
Keratosis obturans (KO) is an uncommon condition localized in the external auditory canal (EAC) and characterized by deposition of layers of keratin and anucleate squames.[1] Although the term ‘external auditory canal cholesteatoma’ (EACC) was used interchangeably with KO in the past, it is now recognized as a distinct entity.[2] The condition was first described in 1850 by Tonybee but the term “keratosis obturans” later was coined in 1874 by Wreden.[3,4] There is an estimated incidence of only 4-5 cases per 1000 new otological cases. There is a diagnostic challenge in distinguishing keratosis obturans from external auditory canal cholesteatoma (EACC) due to their overlapping features. We discuss here a case of keratosis obturans in a 28 year old male patient who came with complaints of left ear pain. Microscopically, it showed fragments of keratinous material composed of layers of anucleate squames admixed with tiny fragments of loose fibrovascular tissue.

CASE REPORT
A 28 years old male patient came with the complaints of left ear pain since 3 days. There was history of self cleaning of ear and recent upper respiratory tract infection. There was no history of ear discharge. There was no history of fever, allergy or any other comorbidities. There was no other significant past medical or surgical history. On examination, the left external ear canal was edematous, discharging, pinkish granulation tissue seen along with ear wax and the tympanic membrane (TM) was not visualized. Both ears were normal externally. On throat examination, bilateral grade II tonsils were noted. No abnormality detected in the nose. The above clinical findings pointed to a provisional diagnosis of Keratosis obturans (KO). Patient thereby underwent excision of the left ear KO under GA and the tissue specimen was sent for histopathological examination. Light microscopy with H&E stain revealed multiple fragments of keratinous material (Figure 1) composed of layers of anucleate squames (Figure 2) admixed with tiny fragments of loose fibrovascular tissue (Figure 3). With the following findings, a final diagnostic report of Keratosis Obturans was made.

DISCUSSION
Naiberg et al. found subepithelial inflammation and vasodilatation in middle external auditory meatus.[9] Symptoms such as otalgia, deafness and mental inflammation are due to increased accumulation of dequamated epidermis in the EAC.[10] There is a diagnostic challenge in distinguishing keratosis obturans from external auditory canal cholesteatoma (EACC) due to their overlapping features.[11,11] Although both the conditions are uncommon, EACC comprises approximately 0.1-0.3% of the patients with otologic disorders.[12,13,14] EACC may present with more severe symptoms such as osteitis and erosion of EAC with bony sequestration.[15] Jarvis et al. presented a case of an elderly lady with otalgia, chronic ear discharge and a keratin mass which was diagnosed as EACC but turned out to be KO.[16] Also, hearing loss and bony erosion may not be sufficient a conclusion for diagnosing EACC.[17] There is also a reported case of petrous bone erosion in KO.[18] Involvement of tympanic membrane and facial nerve leading to facial nerve palsy have also been reported in literature.[19,20] Microscopically, KO shows tightly packed lamellar keratin squames, diffuse acanthosis and

Table: Pathology

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Figure 1: (Low power, H&E) Fragments of keratinous material.

Figure 2: (High power, H&E) Layers of anucleate squames.

Figure 3: (Low power, H&E) A tiny fragment of loose fibrovascular tissue.
hyperkeratosis of EAC with underlying chronic inflammation. No evidence of osteonecrosis or overlying epithelial loss is usually seen. Immunohistochemical staining for cytokeratin (CK5,6,8,17 and 19) and tenascin can be performed when in doubt.[10] Also, stains for growth factors like EGFR, TGF-β1, Ki67 proliferation index and p53 antigens which stain positive for bony resorption may be done if needed.[10] The mainstay of treatment of keratosis obturans is removal of the desquamated squamous epithelium ether by surgical debridement under general anaesthesia. In addition, regular cleansing of the EAC every 1 to 3 months for reduction of debris accumulation is recommended. Local corticosteroids reduce inflammation.[21]

CONCLUSION
Keratosis obturans being an uncommon presentation in the otologic opd may often be underdiagnosed as impacted wax or overdiagnosed as external auditory canal cholesteatoma. Histopathology plays a vital part in determining the underlying lesion and to further prevent from overdiagnosing. In rare circumstances of atypical keratosis obliterans and in cases of osseous involvement, IHC may play a role in providing a definitive diagnosis.

REFERENCES