

# Foreign Body in the Middle Ear, A Hearing Aid Complication

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## SUMMARY

A 12-year-old boy with moderate to severe bilateral mixed hearing loss was planned for hearing aid placement. During the process of making ear mould impression, the impression material accidentally entered the right middle ear. Removal of the ear mould impression was possible permeatally under general anaesthesia.

## KEY WORDS:

Hearing aids, Foreign body ear, Middle ear, Ear mould impression

## INTRODUCTION

Complications while making a mould for hearing aids are rare. We present a case report where the hearing aid mould impression material accidentally entered the middle ear of a patient who had a perforated ear drum. Patient had undergone general anaesthesia for complete removal of the mould impression after a failed attempt of removing it in the outpatient clinic.

## CASE REPORT

A 12-year-old boy was referred to our clinic for bilateral hearing impairment. The child was able to speak but performing badly in school and was advised by the teachers

for hearing assessment. The mother also gave a history of recurrent ear discharge bilaterally since early childhood. On otoscopic examination, he was noted to have subtotal central perforation in both tympanic membranes with intermittent otorrhoea. Pure tone audiometry was done which revealed bilateral moderate to severe mixed hearing loss. In view of his age and frequent history of otorrhoea, patient was planned for myringoplasty at a later date. In the mean time patient was advised to wear hearing aid to improve his hearing and was referred to an audiologist for a hearing aid placement.

During the process of making the ear mould, the technician was unable to remove the mould impression. Hence, he was immediately referred to our clinic.

On arrival, the child complained of slight pain in the right external auditory canal but no giddiness. On inspection a silicone impression material was seen in the right external auditory meatus and in the middle ear as well (Figure I). Attempted removal of the impression material in the clinic but failed. Examination under general anaesthesia revealed that the mould impression material was in the middle ear. The impression material was removed permeatally and the ossicular chain was intact. It appeared that the impression material had filled the hypo and mesotympanum and even entered the eustachian tube (Figure II).

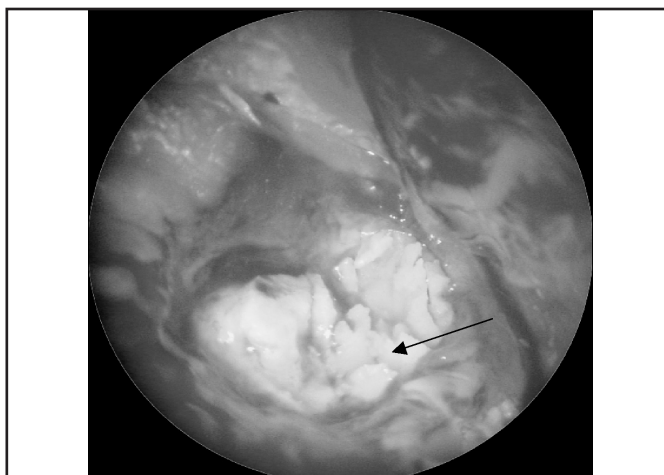


Fig. 1: The ear mould silicone impression material in the right middle ear. Pointer showed the ear mould impression material in the right middle ear.

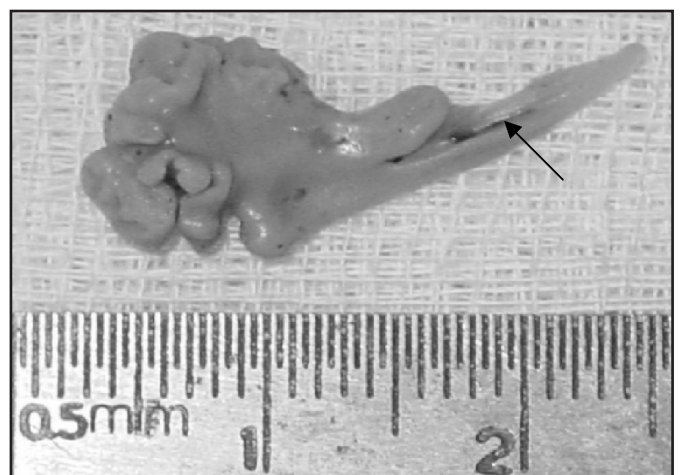


Fig. 2: The ear mould impression material that was removed from the middle ear. Pointer showed part of the silicone impression material that extended into the eustachian tube.

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Postoperative recovery was uneventful. The patient was discharged well the next day with oral and topical antibiotics. A repeated pure tone audiometry showed no further deterioration in hearing after the procedure.

#### DISCUSSION

This case shows that the making of the hearing aid mould is not without any complications. Care should be taken to put adequate cotton plug in the external canal prior to the procedure. It is highly recommended that a qualified technician carries out this procedure. The technician should know the patients condition prior to the procedure. The elastic nature of silicone impression material makes it difficult to remove under local anaesthesia. Hof JR *et al*<sup>1</sup> reported a similar case of an eight years old child but in his case a tympanotomy was done to remove the mould impression material in the middle ear. Syms CA 3rd *et al*<sup>2</sup> reported four cases of impression-material foreign bodies of the middle ear and external canal. The impression materials were removed by transcanal approach for three of the cases and by facial recess approach for one. Meanwhile, this is the first case that we have encountered in our center.

In summary, the mould should be made by an experienced person trained in this field. Prevention should be the mainstay of treatment. A cotton, an ear plug or some other protective devices should be inserted prior to the mould

impression making. Proper protocol should be strictly followed during the process of making ear mould impression as the silicone is a recommended and safe material to make the impression. We presumed there was no protective device being used in this patient while making the mould impression.

The authors recommend that the impacted mould impression material should be removed by an experienced Otorhinolaryngologist. An endaural soft tissue incision can be made for better exposure. Tympanotomy may be needed in cases where the mould impression materials are impacted in the middle ear.

#### CONCLUSION

Impression material foreign bodies of the middle ear are rarely reported. Careful removal under general anaesthesia should be done by an experienced Otorhinolaryngologist. This is to ensure that the middle ear structures are not disturbed or damaged.

#### REFERENCES

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