MULTIPLE APPROACHES IN THE REMOVAL OF IMPACTED FOREIGN BODY IN THE EXTERNAL AUDITORY CANAL. A CASE REPORT

Alabi BS, Iheagwu OI, Omokanye HK, Omotosho W, Alabi TA

Dept of Otorhinolaryngology, University of Ilorin Teaching Hospital, Ilorin. Kwara state.

ABSTRACT:

Introduction

Foreign bodies in the External auditory canal are common among children but can also be seen in adults. Various objects are usually removed as foreign bodies and their removal requires skills by Otorhinolaryngologists sometimes under general anaesthesia using several methods. We report a case of an 8-year-old female child with an impacted foreign body in the right ear canal which was removed through multiple approaches.

Case Presentation

An 8-year-old who presented on account of insertion of a foreign body in the right ear of sudden onset with associated right otalgia. There were attempts at removal at the outpatient department with no success for which she presented to the Otorhinolaryngology department. Due to her uncooperativeness, foreign body removal was done under general anaesthesia through multiple surgical approaches with consequent facial nerve palsy.

Conclusion

Foreign body removal from the external auditory canal especially when impacted requires good skills by the physician, some of which can be complicated by injuries such as tympanic membrane perforation or even facial nerve injury, especially during post auricular approach. Inexperienced physicians should know when to refer to an Otorhinolaryngologists to avoid complications.

Keywords: Impacted Foreign body, External auditory canal, Tympanic membrane perforation, multiple approaches

INTRODUCTION

The external auditory canal (EAC), being the outermost part of the ear, stands the risk of harbouring foreign bodies due to its location. Foreign bodies in the EAC are commonest amongst children but can also be seen in adults as well. They are mostly encountered in children from the ages of 2 to 8 years.[1] The most commonly identified objects are beads, cotton buds, eraser tips and parts of crayons in school-aged children. It has been noted that foreign bodies are inserted into the ears more commonly by children than adults.[2]

Foreign body removal requires skills by an Ear Nose and Throat surgeon sometimes under local anaesthesia or general anaesthesia in uncooperative patients and children.[3-4] Health workers and doctors who are inexperienced usually have a higher incidence of complications which could be bleeding, perforation of the tympanic membrane or auditory canal lacerations.[5-7] Several methods have been advocated for the removal of foreign bodies from the EAC. These methods include canal irrigation, direction suction, direct removal with instruments and surgical approaches.

We report a case of an eight-year-old child with an impacted foreign body of the right ear canal beyond the Isthmus which was removed through per meatal, posterior auricular approaches with Posterior canal wall Osteotomy.

Corresponding Author:
Alabi BS.
Dept of Otorhinolaryngology, University of Ilorin Teaching Hospital, Ilorin. Kwara state.

CASE PRESENTATION

Miss A R is an 8-year-old female Yoruba Muslim basic 2 pupil residing with her parents in Ilorin. The Patient presented 3 months ago on account of a foreign body insertion in the Right ear of sudden onset. The incident occurred while she was playing with Beads and subsequently inserted one into the Right ear. There was an immediate onset of pain, which was described as dull, aching, continuous, and severe enough to inconvenience the patient. There was associated aural fullness and right hard of hearing. There was no bloody otorrhea, vertigo or tinnitus. There were no associated Nasal or throat symptoms. No corresponding behavioural disorders or features of child battering/abuse were observed.

Following the incident of impaction, the patient presented to the General outpatient department of University of Ilorin Teaching Hospital, Ilorin (UITH), where initial attempts were made to remove the foreign body which proved unsuccessful. Consequently, she was referred to the ENT unit of the Hospital, the following day.

Examination Findings

General Physical examination was unremarkable.

Ear, Nose and throat Examination:

The Pinna appeared normal bilaterally in shape, size and position. There was no pre- or post- auricular swelling or

sinuses. Otoscopy on the right ear, revealed scanty blood clots on the floor and posterior wall of the canal with a spherical whitish-grey bead-like foreign body impacted beyond the isthmus of the canal with a tinge of blood from previous attempts at removal. Left Otoscopy revealed a clear canal and shiny tympanic membrane
Nasal and Throat examination did not reveal any significant findings.

Intervention:

The Patient and her relatives were counselled on the need for removal of the foreign body. The procedure was attempted under a well-controlled environment and the patient was restrained; however, she was extremely uncooperative with consequent failed removal of the foreign body. The Patient was placed on topical antibiotics, analgesics and vitamin C syrup and also counselled on dry ear precautions. She was given a one-week appointment to allow for the resolution of Oedema. Subsequent attempts by the managing consultant also failed as the patient was uncooperative even under mild sedation (Intra-muscular diazepam).
She was subsequently booked for foreign body removal under General anaesthesia (GA). She was sent for investigations namely Full Blood Count, Electrolyte Urea and Creatinine and Chest x-ray. Results were all within Normal limits

Surgical Intervention

The Patient had foreign body removal under general anaesthesia through the following approaches; The per-meatal approach under endoscopic guidance of 0-degree Hopkins Rod, the post auricular approach and posterior canal osteotomy (Canaloplasty) to widen the canal before removal of the foreign body (Fig1). The intra-operative anatomy of the canal and Tympanic membrane were distorted. The Patient was wheeled to the recovery room post-op. Immediate Post-operative condition was satisfactory (Fig 2).

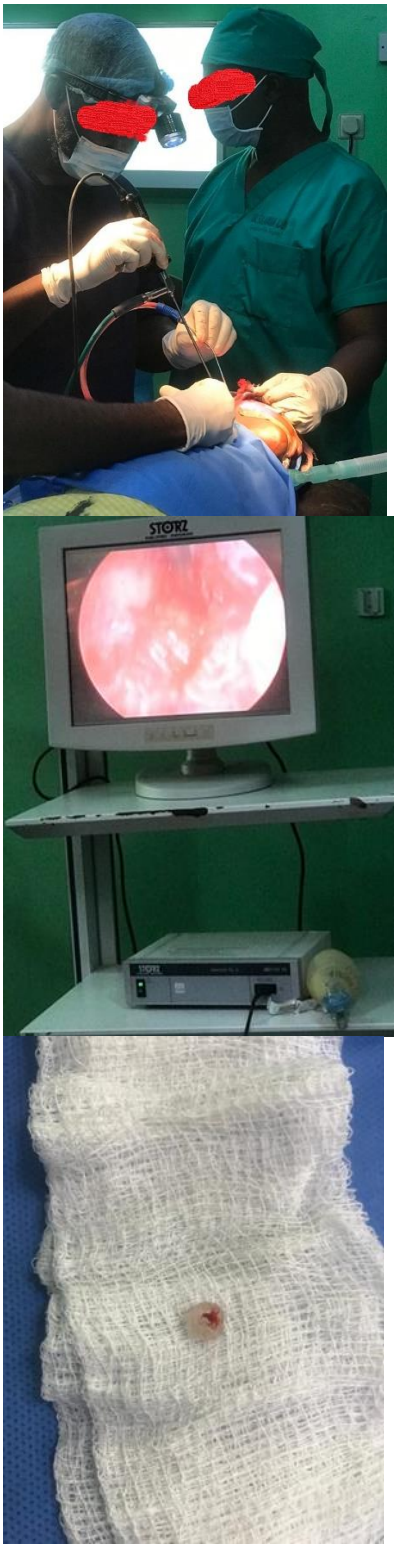

Fig 1: Endoscopic Per meatal approach with Hopkins endoscope and removed Bead

Fig 2: Immediate post-operative period with Post auricular dressing

The Patient however was noticed to have developed right facial nerve palsy (House Brackman 3). She was also on aural toileting and antibiotic impregnated wick dressing with good outcome. Patient was discharged and was on daily Physiotherapy sessions. Subsequent follow up visits showed a healed right post-auricular scar (Fig 3), a normal right external auditory canal with a central perforation (Fig 4) and right facial nerve palsy of House Brackman 3 (Fig 5). The follow-up has been uneventful since over six months.

Fig 3: Healed right postauricular scar

Fig 4: Normal EAC and a central Perforation. No Ear discharge

Fig 5: Right facial nerve palsy (House Brackman grade 3) of the same patient.

DISCUSSION

The external auditory canal harbours foreign bodies in children; these foreign bodies are inadvertently inserted there during plays or out of curiosity. The Majority of these foreign bodies can be removed without the need for any anaesthesia[1].There are many techniques used to remove foreign bodies and the technique adopted is dependent on the foreign body characteristics which include size, shapes, consistency as well as the cooperation and position of the patient.[8] A smooth and hard foreign body like a bead is difficult to grasp and evidence suggests that non-graspable foreign bodies are better removed by the Otorhinolaryngologists compared to other health workers [9]. In our index patient, attempts at removal of the foreign body were made at an outpatient department by non-specialists which led to further displacement of the foreign body beyond the isthmus with impaction.

Tightly impacted foreign bodies beyond the isthmus, tissue trauma and swelling, as well as failed attempts and a non-cooperative patient are all indications for removal under General Anaesthesia.[10] Iseh et al reported 207 cases of foreign bodies in the ear, with only one of them requiring a major surgical operation of posterior tympanotomy.[11] This lends credence to the fact that surgical approaches are also adept at giving good outcomes. A post auricular incision is used to remove a foreign body which cannot be removed via the per-meatal approach. In our index patient, multiple approaches were used which included an endoscopic assisted per-meatal approach and a post

auricular incision with posterior canal wall osteotomy (Canalplasty) approach. The post auricular or Wilde's incision follows the curve of the retro auricular grove, lying 1cm behind it and ends at the mastoid tip. In children, the facial nerve is at risk hence an incision is slanted posteriorly[12,] however in this case the patient wasn't at risk of facial nerve injury from this incision due to her age. The facial nerve injury could have been due to the drilling and thermal damage during the posterior wall osteotomy and Canalplasty.

CONCLUSION

Removal of foreign bodies in the ear in children is sometimes, very challenging even to the experienced Otorhinolaryngologists. This is more common after various attempts by non-professionals and inexperienced physicians. There are multiple approaches to the removal of impacted foreign bodies in the external auditory canal which are per-meatal, endoscopic assisted and post auricular with canal osteotomy to widen the canal. The main approach for removal of this foreign body is the post auricular incision. The facial nerve is at risk of injury during canaloplasty using drill burs due to thermal injury. However, with dexterity and follow-up physiotherapy, the injury could be mitigated.

REFERENCES

1. Baker MD. Foreign bodies of the ears and nose in childhood. Pediatr Emerg Care. Jun 1987;3(2):67–70.
2. Bimal JF, Foreign bodies. In: Maran A G D, Stell P M Eds. Clinical Otolaryngology. Oxford: Blackwell, 1979; 546 – 552.
3. Adhikary B, Bora H, Bandyopadhyay SN, Sen I, Basu SK. Foreign body in ENT—general practitioner's duty. J Indian Med Assoc. May 2008;106(5):307–9.
4. Schulze SL, Kerschner J, Beste D. Pediatric external auditory canal foreign bodies: a review of 698 cases. Otolaryngol Head Neck Surg. Jul 2002; 127(1):73–8.
5. Bressler K, Shelton C. Ear foreign-body removal: a review of 98 consecutive cases. Laryngoscope. Apr 1993;103(4 Pt 1):367–70.
6. DiMuzio J Jr, Deschler DG. Emergency department management of foreign bodies of the external ear canal in children. Otol Neurotol. Jul 2002;23(4):473–5.
7. Thompson SK, Wein RO, Dutcher PO. External auditory canal foreign body removal: management practices and outcomes. Laryngoscope. Nov 2003;113(11):1912–5.
8. Adam JD, Kathrine D, Foreign Bodies in the Ear, Nose and throat, in: Scott Browne's Otorhinolaryngology head and Neck surgery, Vol 2,8th ed, CPC Press, Taylor and Tranes group 2018: 386
9. DiMuzio J Jr, Deschler DG. Emergency Department management of foreign bodies of the external ear canal in children. Otol Neurotol 2002; 23: 473–5
10. H. Pride, R. Schwab, A new technique for removing foreign bodies of the external auditory canal, Paediatr. Emerg. Care 5 (1989) 135–136).
11. Iseh KR, Yahaya M. Ear foreign bodies: observations on the clinical profile in Sokoto, Nigeria. Ann Afr Med. Mar 2008; 7(1):18–23.
12. Dhingra PL, Dhingra S. Ear Surgery and approaches, in Dhingra PL,Dhingra S. Disease of Ear ,Nose and throat and Head and Neck surgery, 7th ed, Elsevier, New Dehli. 485-486