WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Overview and Management of "Cotton Bud" as Foreign Body in the Ear

Denada Florencia Leona [a*]

[a] *Andalas University, Dr. Mohammad Hatta Limau Manis, Padang, 25163, Indonesia*

A B S T R A C T

Background. Ear foreign bodies are a common presentation in emergency settings. They often result from attempts to clean the ears with cotton buds or other objects, leading to potential complications if not promptly and properly managed.

Case Presentation. A 25-year-old male arrived at the emergency department with a two-hour history of a cotton bud lodged in his left ear. The patient reported no pain, bleeding, discharge, hearing loss, or tinnitus. His medical history was unremarkable, with no previous similar incidents or relevant family history. The patient was unemployed and had a habitual tendency to clean his ears with cotton buds and other objects. Physical examination revealed a wide ear canal on the right side with an intact tympanic membrane and positive light reflex. The left ear examination showed a visible cotton bud in the medial two-thirds of the ear canal. The nasal and throat examinations were normal, with no signs of infection or other abnormalities. The patient was diagnosed with a foreign body (cotton bud) in the left ear canal. A successful extraction of the cotton bud was performed without complications. Post-extraction examination confirmed a wide ear canal, no presence of the foreign body, no lacerations or excoriations, and an intact tympanic membrane with a positive light reflex. The patient was given a good prognosis.

Conclusion. Foreign bodies in the ear can cause discomfort and potential complications such as infection or damage to the ear canal and tympanic membrane if not managed correctly. Immediate and proper medical intervention is crucial. This case highlights the necessity for patient education on the dangers of inserting objects into the ears and the appropriate response to foreign bodies.

Keywords: Foreign Body, Ear, Cotton Bud, Management

Introduction

Foreign bodies in the external acoustic meatus are a frequent case and are sometimes difficult to treat. Various types of foreign bodies can be found in the external acoustic meatus. Foreign objects in the ear are classified into living objects such as small insects and inanimate objects. Inanimate objects are divided into organic such as beans, rice and inorganic such as beads, paper folds and toy bullets.[1,2]

It was found that jewelry constituted the largest percentage of foreign objects found in the ear (39.4%), the most frequently encountered foreign objects in the 2 to 8 year group. In adults, cotton buds are the most frequently found objects. Hearing aids and other ear-specific accessories are also frequently found in adults.[3]

Foreign objects often get trapped in the ear canal because there are two anatomically narrow areas in it, namely the area connecting the cartilage and bone, then the isthmus area of the bone.[4] Even though they can be asymptomatic, foreign objects in the external ear canal generally cause discomfort. or pain, congestion, deafness, bleeding or itching. The foreign object must be removed to avoid or treat infection and eliminate symptoms. It is important to remove these objects in optimal conditions with adequate lighting, good instrumentation and anesthesia if necessary, to prevent damage to the ear canal, tympanic membrane and middle ear. Successful removal of a foreign body depends on the patient's level of cooperation, identification of the type and location of the foreign body and appropriate equipment.[5,6,7]

Foreign bodies in the ear are cases that are often found in ENT emergency departments. The incidence reaches 11% for all cases of foreign bodies including those in the nose and throat. Foreign bodies in the ear canal most often occur in children aged < 5 years, while they occur less frequently in adults. In the emergency ENT service of a tertiary hospital in Sao Paulo, there were 15,640 cases in the period February 2010 to January 2011. Foreign bodies contributed 827 visits, or 5.3% of all cases. Patients had a mean age of 19.8 years and a median age of 8 years. A greater incidence is found in individuals aged < 8 years with a peak incidence at the age of 3 years. [8, 9, 10]

Of the 827 patients included in the study, 386 were women (46.7%) and 441 were men (53.3%), with a female to male ratio of 1.14: 1.00. Most foreign bodies (94.8%) were located in the ear, nose or throat. The location of foreign bodies in the patient group was mostly in the ear (64.4%), followed by the nasal fossae (19.5%), and oropharynx (8.9%). The location of foreign objects that are difficult to determine is 2.9% of cases.[8]

Foreign objects that enter the ear canal can be organic and non-organic inanimate objects, or living objects. In small children, green beans, beads, toys, rubber erasers and sometimes batteries are often found. In adults what is relatively often found is cotton buds left behind, pieces of matches, broken pencils, sometimes small insects such as cockroaches, ants or mosquitoes are found. Factors that play a role in the entry of foreign objects in the ear canal are the desire to explore the body cavities (orifices), especially in children. This occurs due to lack of parental supervision of children from objects that are at risk of entering the ear canal. Other factors include curiosity, irritation due to otalgia, interest in small objects, mental retardation and ADHD. While in adults it is usually caused by accident/accident.[11,12]

The effects of inserting a foreign object into the ear can range from no symptoms to symptoms of severe pain and decreased hearing.13 The clinical manifestations can be feeling unpleasant to the ear because foreign objects that enter the ear make the ear feel uncomfortable, and many people actually clean their ears, even though cleaning will encourage foreign objects that have entered in to enter again. The ear will be blocked, because there is a foreign object that enters the ear canal, of course it makes the ear feel blocked. Hearing impaired can be also the one of the symptopms. Usually there is conductive deafness but it can also be mixed. The severity of deafness depends on the size and location of the tympanic membrane perforation as well as the integrity and mobility of the sound delivery system to the middle ear. Ear pain / otalgia, pain can mean there is a threat of complications due to obstruction of the drainage of secretions, exposure of the dura mater or lateral sinus wall, or the threat of brain abscess formation. Pain is a sign of developing ear complications due to a foreign body. On inspection of the ear there will be a foreign object.[13]

Foreign objects in the ear canal must be removed. The external ear canal consists of cartilage and bone which are covered by a thin layer of skin and periosteum. The bone area is very sensitive because the skin only provides a small cushion covering the periosteum. Thus, trying to remove a foreign object can be very painful. In addition, the external ear canal narrows at the junction between the cartilaginous and bony parts. Foreign objects can become stuck in these places, increasing the difficulty of removing them. Attempts to remove a foreign object can push it further into the ear canal and become stuck in that tight spot. In addition, the tympanic membrane can be damaged due to pressing the foreign object too deeply or due to the equipment used during the removal process. Therefore, adequate visualization, adequate equipment, a cooperative patient, and the doctor's ability are the keys to removing foreign bodies. [14,15]

In certain cases, such as batteries, consultation with a CITO consultant at the ENT-KL department must be carried out immediately because time-sensitive conditions related to liquefaction necrosis can cause tympanic membrane perforation and other further complications. Irrigation in cases like this is not recommended because it can accelerate the necrosis process.[16]

Improper handling can cause bleeding, trauma to the ear canal, trauma to the tympanic membrane and auditory ossicles. This will increase the patient's pain level, so it will require exploration under general anesthesia to remove the foreign object. Marques, as quoted by Figueiredo, stated that lack of experience in the management of foreign bodies in the ear is one of the factors that causes iatrogenic complications.[17] This case report aimed to present overview and management of a case about foreign body inside the ears.

Case Presentation

A 25 year old male patient came to the hospital emergency room with the main complaint : left a cotton bud in the left ear for ± 2 hours before entering the hospital. History of current illness: Initially the patient picked his ear with a cotton bud, suddenly the cotton was left in the ear. The patient then went to the hospital. There was no pain in the left ear. Left ear felt full. There was discomfort in the left ear. There was no history of bleeding from the ear. There was no history of discharge from the ear. There was no hearing loss. No ringing in the ears. There was no attempt to remove the foreign body. There was no fever, cough, cold. Past medical history: The patient had never suffered from complaints like this before. Family history of illness: no family members suffered from the same complaints as the patient. Employment History, Socioeconomic and Habits: Patient had not worked. The patient had a habit of picking his ears either with a cotton bud or other objects.

Physical examination showed that The right ear has a wide ear canal, intact tympanic membrane, light reflex (+). Left ear: Cotton bud visible in the ear canal in the medial 2/3 of the ear canal. Nose: airy/airy nasal cavity, eutrophic/eutrophic inferior conchae, eutrophic/eutrophic middle conchae, secretions -/-. Throat: symmetrical pharyngeal arches, uvula in the middle, tonsils T1-T1 calm, posterior wall of the pharynx calm. The patient was then diagnosed with corpus allienum “cotton bud” et left ear canal. The therapy given to the patient was corpus alienum extraction which was then carried out successfully.

Picture 1. The size of the cotton bud inside patient's ear

Evaluation of the left ear canal after extraction found a wide ear canal, foreign body (-), laceration (-), excoriation (-), intact tympanic membrane, light reflex (+). The patient's prognosis is good or good. Education to patients after the extractions:

- Eliminate the habit of picking your own ears either with cotton buds or other objects.
- When a foreign object enters, the patient or family should not take any action themselves. Immediately taken to the nearest health service center.
- After the procedure, if there are signs of inflammation such as pain, redness in the ear or discharge coming out of the ear, immediately go back to the doctor.

Discussion

A 25 year-old male patient came to the hospital's emergency room with the main complaint of leaving a cotton bud in his left ear for ± 2 hours before entering the hospital. Initially the patient picked his ear's serumen with a cotton bud, suddenly the cotton was left in the ear. The patient then went to the hospital. There was no pain in the left ear. Left ear felt full. There was discomfort in the left ear. There was no history of bleeding from the ear. There was no history of discharge from the ear. There was no hearing loss. No ringing in the ears. There was no attempt to remove the foreign body. There was no fever, cough, cold. The patient had a habit of picking his ears either with a cotton bud or other objects.

The diagnosis was made based on the patient's history and physical examination. From the history it was known that when the patient picked his left ear with a cotton bud, suddenly the cotton remained in the left ear, the left ear felt full but did not cause hearing loss. From the physical examination, the ear inspection showed a cotton bud in the medial 2/3 of the left ear canal. Based on the literature, a corpus alienum (foreign body) is an object that comes from outside the body or from inside the body, which under normal circumstances does not exist. Foreign objects can be living or inanimate objects. In this case, the foreign object is an inanimate object, namely a cotton bud.

Judging from the etiology, this case was caused by carelessness and the patient's habit of picking his ears with a cotton bud. The patient did not undergo any supporting examinations because foreign objects could be found during the ear inspection. Treatment for patients is in the form of mechanical extraction, where foreign objects are removed using crocodile forceps. Based on the literature, management of the corpus alienum can use several techniques, namely mechanical extraction, irrigation and suction techniques. The technique used depends on the type of foreign object, location and the patient's ear health history. Organic foreign bodies capable of absorbing water, a history of watery ears in the patient were some of the contraindications to the irrigation method. Insects, organic material, as well as foreign objects that have the potential to be fragile and break into several pieces, are more often removed using the suction method compared to forceps. In this case the foreign object is a cotton bud, the cotton bud is an object that can absorb water which is a contraindication for irrigation, and the cotton bud is an inorganic object that is not fragile, so mechanical extraction is the best option. After mechanical extraction, an evaluation of the ear canal is carried out. There was a clear ear canal, no other foreign objects, no lacerations or excoriations, and the tympanic membrane was intact. Patients are educated to eliminate the habit of picking their own ears, either with cotton buds or other objects, and if after the procedure there are signs of inflammation such as pain, redness of the ear or secretions coming out of the ear, immediately return to the doctor. The patient was allowed to go home and did not require medication.[17]

In the anamnesis of cases with corpus alienum, patients will complain of symptoms similar to otitis media/externa such as decreased hearing, feeling of fullness/blockage in the ear, fluid coming out of the ear, ear pain, accompanied by a history of the introduction of a foreign object, whether intentional or not. After the main complaint has been explored and the triggering factor in the form of foreign object entry has been obtained, a physical examination can then be carried out. A localist status check was carried out. The examiner inspects the ear canal without tools/using tools in the form of an ear

speculum or otoscope. Examination with ooscopy: Clean cerumen if any. See canal and tympanic membrane. Interpretation: only foreign objects can be found, there are also signs of inflammation such as redness, swelling, indicating infection. The bluish color and cones indicate a buildup of blood behind the drum. It is possible that the drum is torn. [4,5]

Small foreign objects that do not block the ear canal can be removed with a hook. The tool is inserted around and behind the foreign object and slowly pulled while the tool holds the foreign object and removes it from the ear canal. If a foreign object completely blocks the canal, a small right-angle hook can be used which is inserted along the superior part of the canal and rotated once the tool is behind the foreign body. Before trying to remove a foreign object that is blocking it, it is important to first assess the length of the ear canal based on experience.[18]

If the foreign object is metal, the instrument we use can be magnetized first. This makes it easier to reach the metal and is stable when removed.[17] After each procedure, reassess the ear canal with an otoscope. This assessment is important to detect any post-operative complications.[15]

Irrigation is the best method for removing foreign objects that are not too sticky to the walls of the ear canal. This method is also minimally invasive. Several things that need to be considered before carrying out irrigation are whether or not there is a perforation in the patient's tympanic membrane (complaints of watery ears), the fluid used to irrigate, as well as the irrigation procedure and the patient's position. Irrigation procedures are contraindicated in patients with a history of perforation of the tympanic membrane. The fluid used can be sterile water or saline that has been warmed to the patient's body temperature so as not to trigger vertigo.[16] The irrigation procedure uses a syringe that has been connected to a gauge angiocatheter. Position the patient safely and comfortably. Protect the area around the ear with a cloth to keep it dry. Place a basin under the ear with a foreign object to collect any fluid or foreign objects that are expected to come out. Gently, position the tip of the angiocatheter in the outer ear canal (not too deep) and inject fluid until the foreign object comes out. After discharge, re-evaluate the ear canal.[16] Suction is the right choice for extracting foreign objects in the ear that are fragile and easily broken into several parts such as small dead insects or some organic material. After the suction machine is turned on, the catheter is inserted slowly through the otoscope with a removable lens and continues until the foreign object is sucked in or if it is larger the foreign object is attached to the tip of the catheter. After that, remove the catheter and evaluate the ear canal, whether there are still foreign objects or complications that occur after the procedure. [16]

When carrying out one of the above procedures, complications occur such as a foreign object being pushed deeper, there is bleeding, edema, or the pain in the ear increases, then stop the action and immediately consult the patient to an ENT-KL specialist. Repeating the procedure in cases with complications as mentioned above tends to cause infection, perforation, and other comorbidities.[16] There is no indication for the administration of prophylactic antibiotics for patients who have had foreign bodies extracted without complications. If there are signs of infection or abrasion of the ear canal, the patient can be given ear drops containing antibiotics and corticosteroids such as cortisporin (hydrocortisone/neomycin/polymyxin) 5 drops/day for 5-7 days.[16]

Conclusion

This case report highlights the importance of public education on safe ear hygiene practices. A 25-year-old male presented with a cotton bud lodged in his left ear, resulting from habitual ear cleaning. The case underscores the potential risks associated with using cotton buds or other objects for ear cleaning, which can lead to foreign body impaction and other complications. Successful extraction of the foreign body without complications emphasizes the necessity for immediate medical intervention in such cases. Post-extraction, the patient was given a good prognosis, with no damage to the ear canal or tympanic membrane. Patient education is crucial in preventing similar incidents. Patients should be advised against inserting objects into their ears and instructed to seek prompt medical attention if foreign bodies enter the ear. Additionally, they should be informed about monitoring for signs of inflammation or infection post-procedure. This case serves as a reminder of the need for ongoing public awareness regarding safe ear care to prevent foreign body incidents and associated complications.

References

1. Ogunleye AOA and Sogebi R. Otic Foreign Bodies In Children In Ibadan, Nigeria. Nigerian journal of surgical Research. 2005; Vol 7 (3-4):305-308.
2. Shrestha I, Shrestha BL, Amatya RCM. Analysis of Ear, Nose and Throat Foreign Bodies in Dhulikhel Hospital. Kathmandu University Medical Journal. 2012; Vol 11 (2); 4-8.
3. Mantooth R. Ear Foreign Body Removal in Emergency Medicine. 2013. Diakses dari http://emedicine.medscape.com/article/763712-overview pada tanggal 26 november 2017.
4. T. Nagendran MP. Management of Foreign Bodies in the Emergency Department. Nagendran: Foreign Bodies. 1999; Pp 27-44.
5. Lucente, E.Frank et all. Ilmu THT Esensial. Edisi V. 2011. Jakarta: Penerbit Buku Kedokteran EGC.
6. Staf Pengajar Ilmu Penyakit THT FKUI. Buku Ajar Ilmu Kesehatan Telinga Hidung Tengorok Kepala Leher. Edisi ke 6 Cetakan ke1. Balai Penerbit FKUI : Jakarta, 2012.
7. Fornazieri MA, Cutolo D, Moreira JH, et al. Foreign-body in External Auditory Meatus: Evaluation of 462 Cases. Intl. Arch. Otorhinolaryngol., São Paulo – Brazil. 2010;14(1):45-49.

8. Gomes et *al.*,.ENT Foreign Bodies: Profile of The Cases Seen at A Tertiary Hospital Emergency Care Unit. Brazil Journal Otorhinolaringology. 2013; 79(6) : 699-703.
9. Ogunleye AOA and Sogebi R. Otic Foreign Bodies In Children In Ibadan, Nigeria. Nigerian journal of surgical Research. 2005; Vol 7 (3-4):305-308.
10. T. Nagendran MP. Management of Foreign Bodies in the Emergency Department. Nagendran: Foreign Bodies. 1999; Pp 27-44
11. Heim SW, Maughan KL. Foreign Body in the Ear, Nose, and Throat. University of Virginia School of Medicine, Charlottesville, Virginia. *Am Fam Physician*. 2007, Oct 15; 76(8): 1185-89. Diunduh dari: http://www.aafp.org/afp/2007/1015/p1185.html pada tanggal 20 November 2017
12. Shrestha I, Shrestha BL, Amatya RCM. Analysis of Ear, Nose and Throat Foreign Bodies in Dhulikhel Hospital. Kathmandu University Medical Journal. 2012; Vol 11 (2); 4-8
13. Heim SW, Maughan KL. Foreign Body in the Ear, Nose, and Throat. University of Virginia School of Medicine, Charlottesville, Virginia. *Am Fam Physician*. 2007, Oct 15; 76(8): 1185-89. Diunduh dari: http://www.aafp.org/afp/2007/1015/p1185.html pada tanggal 16 Juli 2011.
14. Boies. Penyakit Telinga Luar. Buku Ajar Penyakit Telinga, Hidung, Tenggorokan, ed 6, Alih Bahasa Dr. Caroline Wijaya, Penerbit Buku Kedokteran, EGC, Jakarta, 1994: 78 - 80. 28. Maqbool M. *Textbook*
15. Heim SW, Maughan KL. Foreign Bodies in the Ear, Nose, and Throat. Am Fam Physicians. 2007;76:1185-9
16. Kwong AO, Provataris JM. 2014. Ear Foreign Body Removal Procedures. Diakses dari http://emedicine.medscape.com/article/80507. Diakses pada tanggal 11 Mei 2016
17. Buccino K, Plantz SH, Talavera F, Taylor JP. 2014. Foreign Body, Ear. Diakses dari www.emedicinehealth.com/foreign_body_ear/. Diakses pada tanggal 11 Mei 2016.
18. Lucente, E.Frank et all. Ilmu THT Esensial. Edisi V. 2011. Jakarta: Penerbit Buku Kedokteran EGC.