

# Analysis of Ear, Nose and Throat Foreign Bodies at a Tertiary Health Care Centre



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## Abstract

Foreign bodies of ear, nose and throat commonly occur in clinical practice. Management of foreign bodies should be prompt to avoid complications. This is a hospital based retrospective study from January 1, 2018 to June 30, 2019 in ENT department of Dhulikhel hospital. Data of 105 patients diagnosed with foreign bodies in the Ear, nose and throat were retrieved from the hospital record books and entered a Performa. Data of patients were then analyzed using SPSS 23 version. The mean age of the study subject was 24.56+/-20.02 year, with minimum age of one year and maximum of 75 years. Majority were children of age group of 0-10 years (36.2%). Male predominance was noted (61%). Foreign body of the ear was found to be highest with 45 cases (42.9%) and foreign body in the hypopharynx was lowest with only 2 case (1.9%). Insertion of foreign bodies in ear and nose was found to be more on the 33(50%) right side. Most of foreign bodies were organic 66 (62.9%) with chicken/mutton bone as most common (25.4%). Only 29 cases (27.6%) had to undergo removal in operation theatre under GA general anesthesia. The knowledge of foreign bodies is necessary to help in monitoring activity aimed at identifying risky foreign bodies and hazardous behavior, so as to implement educational preventive strategies.

**Keywords:** Complications; Foreign body; Organic

## Introduction

Foreign body (FB) is any object in a region where it is not meant to be; where it can cause harm by its mere presence if immediate medical attention is not sought [1]. In Otorhinolaryngology, these are commonly encountered in clinical practice. It mostly occurs in ear and nose in children and in throat in adults and elderly [2,3]. The common causes for foreign bodies lodgment in children may be accidental or deliberate. Factors responsible are curiosity, boredom, imitation, irritation, rhinitis, otalgia, fun making, and the wish to explore the orifices of the body [4].

Foreign bodies can be classified in many ways like organic-inorganic, animate-inanimate, metallic-nonmetallic, hygroscopic-no hygroscopic, regular-irregular, soft-hard, and according to their nature [5-7]. The foreign bodies in ear elicits inflammatory response and so patients present with unilateral purulent ear discharge, ear pain, bleeding from the ear, conductive hearing loss, tinnitus, itching, cough and offensive smell, cerebrospinal fluid leak from the ear, vertigo and facial nerve paralysis [8]. Those of nose elicits unilateral offensive nasal discharge. Common complications are rhinosinusitis and less common are foreign

body granulomas, septal abscess, and perforation. Foreign body in the throat can create anxiety to patient and caregivers resulting in multiple attempts of self-removal which may lead to abrasions, lacerations, and mucosal ulceration [9,10].

Presence of foreign bodies is generally not life threatening. However, if dislodged into the airway may result in long term complications and can even be fatal [11]. Likewise, esophageal foreign bodies have high mortality rate if complications such as esophageal perforation, mediastinitis, vascular trauma, aorto-esophageal fistula, pseudoaneurysm, paraoesophageal abscess, tracheoesophageal fistula are encountered [12-15]. Consequences from foreign bodies and method of removal is dependent upon the chemical composition, shape and dimensions of foreign bodies and anatomical site involved [16,17]. This study aims to analyze ear, nose, and throat foreign bodies in terms of age, gender, type, and location. Integration of information of this study will help in monitoring activity aimed at identifying risky foreign bodies and hazardous behavior, to implement educational preventive strategies.

**Materials and Methods**

A retrospective hospital based descriptive study was carried out. Patients presenting to ENT OPD and emergency department of Dhulikhel hospital (a tertiary center in Central Nepal) between January 1, 2018 to June 30, 2019 and diagnosed as foreign body in the ear, nose and throat were included in the study. However, patients presenting to emergency with foreign body in airway requiring further management were referred to other tertiary centers due to lack of proper instrumentation and were thus excluded from the study. The data of included patients were retrieved from the hospital record books after approval from the Institutional Review Committee. Otoscopic examination, anterior rhinoscopy and X-ray soft tissue neck (Antero-posterior and lateral view) were done to diagnose patients with foreign bodies. Instruments like Jobson Horne probe, FB hook, Tilley forceps, and crocodile forceps were used for foreign bodies removal from nose and ear in addition to syringing and suctioning.

However, for foreign bodies of hypopharynx/ esophagus, direct laryngoscopy (hypopharyngoscopy) and rigid esophagoscopy was done for foreign body removal, respectively. All the records were then entered into Performa sheet. These were then analyzed in relation to age and sex distribution; type and location of foreign body; frequency of types of foreign bodies encountered in various age groups. Data was analyzed using Software Package for Social Sciences (SPSS) 23.0 version.

**Results**



**Figure 1:** A mustard seed as seen by an otoscope.

One hundred and five cases of foreign bodies of ear, nose and throat who presented to Emergency and OPD were included in the study. The mean age of the study subjects was 24.56+/-20.02 year, with minimum age of one year and maximum of 75 years. Majority of cases were children of age group of 0-10 years (36.2%), followed by 21- 30 years (16.2%). Male predominance was noted (61%) (Table 1). Foreign body of the ear was found to be highest with 45 cases (42.9%) followed by throat 24 (22.9%), nose 21 (20.0%), esophagus 13 (12.4%) and foreign body in the

hypopharynx was lowest with only 2 cases (1.9%) (Figure 1). Among the ear and nose cases, 33(50%) cases were found to have inserted into their right side, 29 (43.9%) into their left side and 4(6.1%) cases were found to have inserted in bilateral sides. Most of foreign bodies were organic 66 (62.9%) (Figure 2).

**Table 1:** Socio-Demographic Table.

Socio-Demographic Table		
Age distribution		
Age in years	Number	%
<= 10	38	36.2
11 - 20	14	13.3
21 - 30	17	16.2
31 - 40	10	9.5
41 - 50	11	10.5
51 - 60	11	10.5
61 - 70	3	2.9
70+	1	1
Sex distribution		
Female	41	39
Male	64	61



**Figure 2:** An insect retrieved from the ear.

Among the organic foreign bodies, chicken/mutton bone was found to be most common (25.4%) (Figure 3). Eraser and pebble were more commonly recovered from children of <=10 years of age and Chicken/mutton bone was found to be more common in patients aged 51-60 years. Leech was removed in 6 cases and in all, was removed only from the nose. Among all the cases of foreign body removal, only 29 cases (27.6%) had to undergo removal in operation theatre under GA. Complication was encountered in only one case of removal of artificial denture by rigid esophagoscopy in which esophageal perforation occurred along with empyema thoracis. He was managed conservatively after drainage and improved.

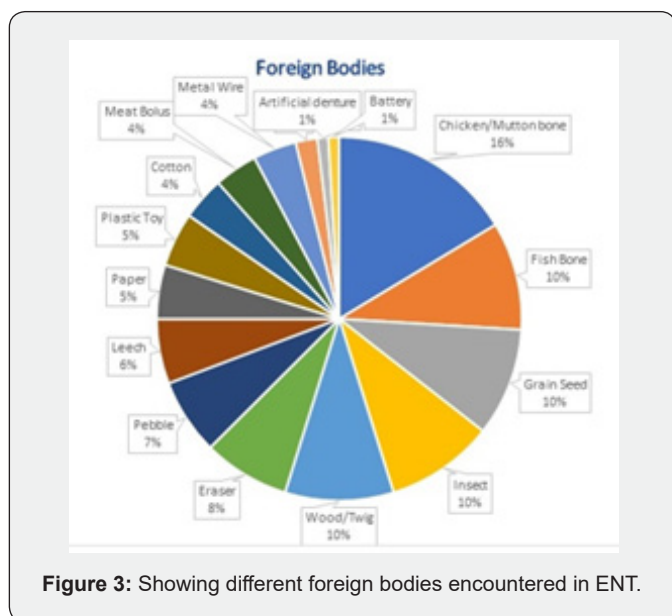


Figure 3: Showing different foreign bodies encountered in ENT.

Discussion

Diagnosis of foreign body is usually made by history of FB lodgment in adults and older children. However, younger children are brought to clinic by anxious parents or relatives after witnessing the insertion of foreign body even if the child is clinically silent. FBs vary widely in shape, size, and composition. Symptoms range from asymptomatic to acute life-threatening condition. In our study, male predominance was found in 61% cases. GA for removal was required only in 27.6% cases. In previous studies conducted by Shrestha I, et al. [18]; Parajuli R [19] and Bhatta R [20] in different parts of Nepal, male predominance was found in all of the studies with approx. similar percentage patients requiring GA for removal. However, the reason for male predominance could not be determined [18-20].

The most common site for foreign body lodgment in our study was ear predominantly on the right side. However, in a study conducted by Bhatta R [20] in Western Nepal, most common site of lodgment was found to be in the nose. According to the laterality, right ear and left nostril were found to be the common sites [20]. This may be as maximum people are right-handed, resulting in tendency to insert into right orifices. Our common type of foreign body is organic with more prevalence of chicken/mutton bone in the esophagus. In a study conducted by Shrestha I, et al. [18] in Dhulikhel hospital itself, 8 years back, most common foreign bodies were non-living [18]. Bhatta R reported grain seed as the most common foreign body encountered [20]. In our study, chicken/mutton bone were seen more prevalent, mostly in elderly population, probably due to impaired swallowing control [17].

Our common age, irrespective of type and site is <=10 years of age. This result is consistent with other similar studies (18,20-22). This may be as children naturally tend to explore the orifices of the body, imitate and due to curiosity, boredom and fun making [4]. In a study conducted in Egypt, the mean age was found to be

12.5 years [21], lower than the mean age in this study, which is 24.56 years. This can be explained by the fact that in this study, multiple cases of foreign bodies were observed in aged patients as well, mainly of age 41-60 years.

In all the cases of foreign body removal, leech was found in the nasal cavity in 6 cases. In villages in Nepal where natural springs serve as the major source of drinking water, people tend to bend down completely and drink directly from the water surface. In such instances, the leech can easily enter the nasal cavity, resulting in intermittent nasal bleeding and foreign body sensation. Lithium battery was found in one case of foreign body in the ear.

These batteries are small, shiny, and thus attractive to children, increasing the chances of insertion. Lithium batteries are 3 V in comparison to the 1.5 V of traditional alkaline button batteries rendering them more powerful, also in terms of mucosal destruction. The low voltage electric current and electrolysis-induced release of sodium hydroxide and chlorine gas are responsible. Liquefactive necrosis could result if the alkaline contents leak out into the tissues [23-25]. Hence, these must be removed promptly due to the potential chances of complication (Figures 4&5). In a study conducted in Iraq, there was the mention of new type of foreign body (Bluetooth devices) which were removed [2]. In our study, however, all the foreign bodies were common organic and inorganic objects encountered in daily practice. However, detail socio-demographic factors involved, mode and duration of presentation could have been included in the study.

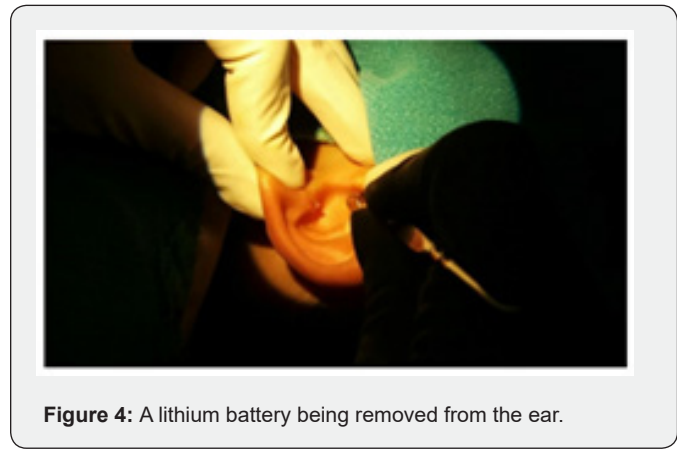


Figure 4: A lithium battery being removed from the ear.

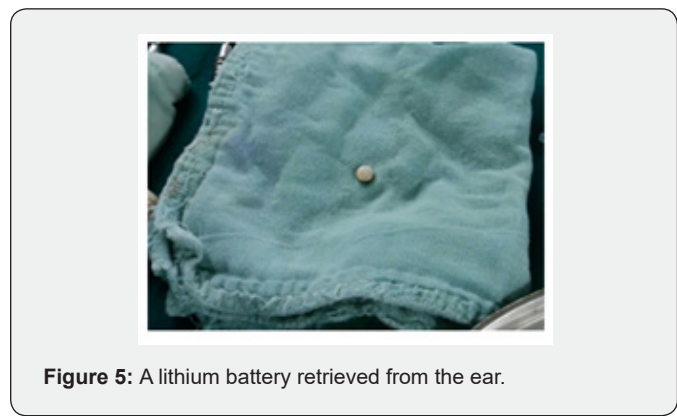


Figure 5: A lithium battery retrieved from the ear.

## Conclusion

Foreign bodies are frequently encountered in clinical practice in ENT. Inorganic bodies like erasers, pebbles are seen more frequently in ear and nose in children whereas organic bodies like chicken/mutton bone are seen more commonly in esophagus of adults and elderly people. Foreign bodies in ear/nose are mostly inserted in the right side. Most of these are easily removed in OPD basis. The knowledge of foreign bodies and their complications is necessary for timely presentation to hospital and referral to ENT clinic for safe removal with minimum complications.

## References

- Sarkar S, Roychoudhury A, Roychoudhuri BK (2010) Foreign bodies in ENT in a teaching hospital in Eastern India. *Indian J Otolaryngol Head Neck Surg* 62(2): 118-120.
- Al juboori AN (2013) Aural Foreign Bodies: Descriptive Study of 224 Patients in Al-Fallujah General Hospital, Iraq. *Int J Otolaryngol* 2013: 1-4.
- Pecorari G, Tavormina P, Riva G, Landolfo V, Raimondo L et al. (2014) Ear, nose and throat foreign bodies: The experience of the Pediatric Hospital of Turin. *J Paediatr Child Health* 50(12): 978-984.
- Adedeji TO, Sogebi OA, Bande S (2016) Clinical spectrum of ear, nose and throat foreign bodies in North Western Nigeria. *Afr Health Sci* 16(1): 292.
- Schulze SL, Kerschner J, Beste D (2002) Pediatric External Auditory Canal Foreign Bodies: A Review of 698 Cases. *Otolaryngol Neck Surg* 127(1): 73-78.
- Gupta P, Jain A (2014) Foreign bodies in upper aero-digestive tract: a clinical study. *Int J Res Med Sci* 2(3): 886.
- Okhakhu A, Onyeagwara N (2018) Aerodigestives foreign bodies: Clinical profile and management. *P H Med J* 12(1): 37.
- Kumar SU, Ahmed SH (2008) Use of cotton buds and its complications. *J Surg Pak (International)* 13: 3.
- Okhakhu AL, Onyeagwara NC (2018) Aerodigestives foreign bodies: Clinical profile and management. *Port Harcourt Medical Journal* 12(1): 37.
- Ghosh P (1999) Foreign bodies in ear, nose and throat (Predictions and management). *Indian J Otolaryngol Head Neck Surg* 51(1): 2-5.
- Gregori D, Salerni L, Scarinzi C, Morra B, Berchiolla P, et al. (2008) Foreign bodies in the nose causing complications and requiring hospitalization in children 0-14 age: results from the European survey of foreign bodies injuries study. *Rhinology* 46(1): 28-33.
- Ambe P, Weber SA, Schauer M, Knoefel WT (2012) Swallowed foreign bodies in adults. *Dtsch Arzteblatt Int* 109(50): 869-875.
- Li Z S, Sun Z X, Zou D W, Xu G M, Wu R P, et al. (2006) Endoscopic management of foreign bodies in the upper-GI tract: experience with 1088 cases in China. *Gastrointest Endosc* 64(4): 485-492.
- Peng A, Li Y, Xiao Z, Wu W (2012) Study of clinical treatment of esophageal foreign body-induced esophageal perforation with lethal complications. *Eur Arch Oto-Rhino-Laryngol Off J Eur Fed Oto-Rhino-Laryngol Soc EUFOS Affil Ger Soc Oto-Rhino-Laryngol - Head Neck Surg* 269(9): 2027-2036.
- Shaker H, Elsayed H, Whittle I, Hussein S, Shackcloth M (2010) The influence of the "golden 24-h rule" on the prognosis of oesophageal perforation in the modern era. *Eur J Cardio-Thorac Surg* 38(2): 216-222.
- Balbani APS, Sanchez TG, Butugan O, Kii MA, Angélico FV, et al. (1998) Ear and nose foreign body removal in children. *Int J Pediatr Otorhinolaryngol* 46(1): 37-42.
- Thompson SK, Wein RO, Dutcher PO (2003) External auditory canal foreign body removal: management practices and outcomes. *Laryngoscope* 113(11): 1912-1915.
- Shrestha I, Shrestha B, Amatya R (2013) Analysis of Ear, Nose and Throat Foreign Bodies in Dhulikhel Hospital. *Kathmandu Univ Med J* 10(2): 4-8.
- Parajuli R (2014) Foreign Bodies in the Ear, Nose and Throat: An Experience in a Tertiary Care Hospital in Central Nepal. *Int Arch Otorhinolaryngol* 19(02): 121-123.
- Bhatta R, Pyakurel M, Parajuli R (2017) Types of Foreign Body In Ear, Nose And Throat In Western Part Of Nepal 4(3): 555640.
- Awad A, El Taher M (2018) ENT Foreign Bodies: An Experience. *Int Arch Otorhinolaryngol* 22(02): 146-151.
- Mangussi Gomes J, de Andrade JSC, Matos RC, Kosugi EM, de Oliveira Penido N (2013) ENT foreign bodies: profile of the cases seen at a tertiary hospital emergency care unit. *Braz J Otorhinolaryngol* 79(6): 699-703.
- Capo JM, Lucente FE (1986) Alkaline battery foreign bodies of the ear and nose. *Arch Otolaryngol Head Neck Surg* 112(5): 562-563.
- Hong D, Chu YF, Tong KM, Hsiao CJ (1987) Button batteries as foreign bodies in the nasal cavities. *International journal of pediatric otorhinolaryngology* 14(1): 15-19.
- Gomes CC, Sakano E, Lucchezi MC, Porto PR (1994) Button battery as a foreign body in the nasal cavities. *Special aspects. Rhinology* 32(2): 98-100.



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