

Correlates between Patient Gender, Type of Foreign Body and Location of Foreign Body in Cases of Foreign Body Impaction in Ear, Nose and Throat Region at Mayo Hospital Lahore

TAIMOOR AKRAM KHAN¹, IQRA TAHIR², HAFIZ MUDABBAR MAHBOOB³, MUHAMMAD NASIR⁴, ALI AKRAM KHAN⁵

ABSTRACT

Aim: To analyze foreign bodies of ENT region in terms of age, gender distribution, type and site of impaction and to check for significant correlations between these factors.

Methods: This prospective study was conducted at ENT Emergency Section of Mayo Hospital Lahore from November 2012 to January 2013 in which all the patients that presented with the complaint of foreign body impaction in ENT region were included and site, type and location of foreign body were determined by detailed history and examination. One way ANOVA was used to check the statistical significance between variables.

Results: In both genders, most common location for foreign body was ear. Pearls were most common in ear (105 out of 342 cases of ear), plastic pellets were most common in nose (38 out of 182 cases of nose) and bone piece was the dominant foreign body in throat (33 out of 59 cases) of foreign body throat. The commonest types of foreign bodies in males were plastic pellets (71 out of 331 cases) and least were pins (only a single case). In females, the most common foreign body type was pearls (90 out of 252 cases) and nuts and bolts were the least common (only 2 cases out of 252).

Conclusion: Type of impacted foreign body has a strong association with the gender of patient and also varies with the site of impaction. Educating the caregivers about this association can reduce the incidence of foreign body impaction in ENT region.

Key words: Ear, Nose and Throat (ENT), Foreign Body, Location of foreign body, Type of foreign body

INTRODUCTION

A Foreign body is an object in an unwanted area where its presence can cause harm if prompt diagnosis and relevant management is not done.¹ It is a commonly encountered problem in otorhinolaryngologic emergencies and contributes to the disease burden in a tertiary care hospital. The common sites involved are Ear, Nose and Throat. Commonly found foreign bodies in ENT region are pearls, pellets, seeds, insects, coins and bones.²

Foreign bodies are reported in both adults and children but are more prevalent in children due to multiple factors e.g., playing, curiosity to explore orifices, Attention deficit hyperactivity disorder, imitation and absence of watchful caregivers.³ Sometimes in an emergency setting, diagnosing a foreign body becomes challenging due to various size, shape and composition of foreign bodies.⁴ In children, inadequate history and younger age are main causes for an undiagnosed case. Patient may present asymptotically and with acute life threatening conditions.

There are various methods for foreign body diagnosis and removal requiring good exposure, compliant patient and trained physician. Examination through otoscope, magnifying glass, anterior rhinoscopy and bronchoscopy are common modalities used for diagnosing ENT foreign bodies⁵. Mostly nasal and aural foreign bodies are removed under local anesthesia while tracheal and esophageal foreign bodies require general anesthesia for their removal⁶.

Removal attempts by untrained health professionals and delayed removal predisposes to various

complications.⁷ Necrosis, scarring, otolith and granuloma formation are main complications seen in ear and nose while hoarseness, stridor and chronic cough are features seen with foreign bodies of throat⁸. Different studies regarding ENT foreign bodies have been carried out in DHQ, Rawalpindi, Khyber teaching hospital, Peshawar and Liaquat university hospital, Hyderabad in Pakistan⁸⁻¹⁰.

The aim of this study is to analyze foreign bodies of ENT region in terms of age, gender distribution, type and site of impaction and to check for significant correlations among these factors. This data will help us to assess the patient load and utilization of the resources of a tertiary care hospital in the management of Otolaryngologic emergencies presenting with foreign bodies. This will also highlight the importance of patient education and general public awareness regarding the management of foreign body insertion in the ENT region.

MATERIALS AND METHODS

This three months study was conducted in the ENT Emergency Section of Mayo Hospital, Lahore, Pakistan from 1st August 2017 to 31st October 2017. Written permission for data collection was obtained from the Chief Executive Mayo Hospital, Lahore. Non-probability convenient sampling was used and all the patients that presented with foreign body impaction in ENT region were included in the research with no exclusion. Detailed history, clinical examination and relevant investigations according to otorhinolaryngologic guidelines were used to investigate the type, site and location of foreign body. One way ANOVA was applied between mean of age and type of foreign body to check the statistical significance between these variables. SPSS 21 was used for entry and analysis of data.

^{1,4,5}Demonstrators, Community Medicine, KEMU Lahore,

^{2,3}House Officers, Mayo Hospital, Lahore

Correspondence to Dr. Hafiz Mudabbar Mahboob Email: mudabbar.mahboob@yahoo.com

RESULTS

In both genders, most common location for foreign body was ear (203 out of 331 male cases i.e. 61.32% and 139 out of 252 female cases i.e. 55.16%) and throat was least common site (33 out of 331 male cases i.e. 9.97% and 26 out of 252 female cases i.e. 10.32%) [Table 1].

Studying foreign body type with respect to the specific location, pearls were most common in ear i.e. 105 cases out of 342 cases of foreign body ear (30.70%), plastic pellets were most common in nose i.e. 38 cases out of 182 cases of foreign body nose (20.87%) and bone piece was the dominant foreign body in throat i.e., 33 cases out of 59 cases of foreign body throat (5.93%). Chi-square test was applied and strong association was seen between the gender of patient and the location of foreign body with a p value of 0.005 (Table 2).

The commonest type of foreign body in males were plastic pellets (71 out of 331 cases i.e., 21.45%) and least common type reported in males was pin i.e., only a single case was reported. In females, the most common foreign body type was pearls (90 out of 252 cases i.e., 35.71%) and nuts and bolts were the least common (only 2 cases out of 252 i.e., 0.79%). Chi-square test revealed strong

association between the type and location of foreign body with a p-value of 0.000 (Table 3).

Comparing the age group of the patient with type of foreign body, most common type of foreign body in first decade of life was pearls (111 out of 401 cases i.e., 27.68%), next common type was pellets (91 out of 401 i.e. 22.69%) and least common type was pin i.e., not even a single cases was reported during first decade of life. Table shows different types of foreign bodies and their respective frequencies in different age group. In patients above 60 years, only foreign bodies found were bone pieces, cotton pieces and insect. One way ANOVA was applied between mean of age and type of foreign body which revealed a strong association between these two with a significant p-value of 0.000 (Table 4).

Table 1: Cross-tabulation between Gender of patient and Location of foreign body

Gender	Location of foreign bodies			Total
	Ear	Nose	Throat	
Male	203	95	33	331
Female	139	87	26	252
Total	342	182	59	583

Table 2: Cross-tabulation between location and type of foreign body

Location of foreign body	Type of Foreign Body													Total
	Coin	Pin	Batteries	Bone piece	Seeds	Pearls	Cotton pieces	Nuts Bolts	Plastic Pellets	Lead Pencil pieces	Buttons	Insect	Stone	
Ear	-	-	8	-	11	105	55	4	63	7	-	47	42	342
Nose	12	-	17	-	15	22	10	6	38	9	27	-	26	182
Throat	7	6	4	33	-	-	-	-	-	-	9	-	-	59
Total	19	6	29	33	26	127	65	10	101	16	36	47	68	583

Table 3: Cross-tabulation between gender of patient and type of foreign body

Gender	Type of Foreign Body													Total
	Coin	Pin	Batteries	Bone piece	Seeds	Pearls	Cotton pieces	Nuts Bolts	Plastic Pellets	Lead Pencil pieces	Buttons	Insect	Stone	
Male	8	1	14	23	17	37	38	8	71	13	19	32	50	331
Female	11	5	15	10	9	90	27	2	30	3	17	15	18	252
Total	19	6	29	33	26	127	65	10	101	16	36	47	68	583

Table 4: Cross-tabulation between age group and type of foreign body

Age (years)	Type of Foreign Body													Total
	Coin	Pin	Batteries	Bone piece	Seeds	Pearls	Cotton pieces	Nuts Bolts	Plastic Pellets	Lead Pencil pieces	Buttons	Insect	Stone	
Birth10	17	-	26	1	22	111	7	9	91	14	31	10	62	401
11-20	1	4	3	1	2	15	10	1	8	2	2	10	6	65
21-30	-	2	-	1	-	-	20	-	1	-	2	14	-	40
31-40	1	-	-	8	1	1	10	-	1	-	1	7	-	30
41-50	-	-	-	5	1	-	9	-	-	-	-	3	-	18
51-60	-	-	-	13	-	-	6	-	-	-	-	2	-	21
> 60	-	-	-	4	-	-	3	-	-	-	-	1	-	8
Total	19	6	29	33	26	127	65	10	101	16	36	47	68	583

DISCUSSION

Foreign body in ENT region are common in both adult and paediatric population. It contributes to a major burden of emergencies presenting in a tertiary care hospital.¹¹ Foreign bodies are classified in different categories i.e., living and nonliving, metallic and non-metallic and so forth.¹² The type of foreign body and its site of impaction

usually depends upon the age group and gender of the patient. Diagnosis of foreign body in children gets delayed due to inappropriate history, unobserved event and nonspecific symptoms.^{5,13} Some adults are also unaware of the foreign body, thus presents with chronic cough and discharging ear or nose. Removal attempts by adults and parents of children lead to further complications.

In our study, both males and females presented with foreign bodies in the ENT region. Male dominance was also seen as depicted in other studies^{3,11,14}. In both genders, ear was the commonest site of foreign body impaction with the presentation of 61.32% cases in males and 55.16% in females. These results were found to be in common with other international studies where foreign bodies ear were the most abundant^{15,16}. In a study conducted in Western part of Nepal, nasal foreign bodies were found to be the most prevalent². The cultural and social parameters also contribute to such differences in results.

While discussing location of foreign body with type of FB, plastic pellets were the most abundant foreign bodies in the ear, contributing 26% of the total. Nose being the second commonest location by 31.2%, plastic pellets were also commonest there, 20.9%. The least number of foreign bodies was found in throat, 10.1%. In throat, bone pieces contributed the most, 55.9%. In ear, nose and throat, the least common items were nuts, bolts and batteries, respectively. The prevalence of type of foreign body with reference to the site also depicts the availability of a specific substance¹⁷.

During the comparison of gender with the type of foreign body, results followed the general trend of our society regarding the presence of foreign body types according to their usage in males and females. In males, most common foreign body found out was plastic pellets, 21.45% while other male dominant foreign bodies included stones, insects, cotton pieces, pearls, bony pieces, seeds, buttons, pellets and batteries in descending order of their abundance. The least common foreign body in males was pin, only 1 case out of 252 itself explaining its use in males. In females, pearls were the most common type 35.71%. Other female dominant foreign bodies were pellets, cotton pieces, stones, buttons, coins and common pins while the least found foreign body was nut bolts 0.79%.

When we compared the age group of the patient with the type of foreign body, the most prevalent type of foreign body in first decade of life came out to be pearls, 27.68%. This was followed by plastic pellets being the second most abundant type of foreign body, 22.7%. During 21 to 30 years, same trend was followed by pearls being most common foreign body in this group i.e., 23%. In middle aged people, cotton pieces took the lead from other foreign body types found in this group i.e., 26.6%. From 51 years and onwards bone pieces turned out to be the most abundant type amongst all foreign body types i.e., 58.6%. The prevalence of pearls and plastic pellets in paediatric group shows the playful nature in this group while in middle aged group, abundance of common pins points out towards the cleaning habits¹⁸. In adults, presence of bone piece as a foreign body is due to poor masticating habits and defective peristalsis due to age related neuromuscular incoordination¹⁹.

Despres N, et al commented that in spite of good education, the insertion of foreign body cannot be eliminated completely especially in children but there is a scope of alerting the common people regarding the complications of foreign body in ENT²⁰.

CONCLUSION

Type, site, location of foreign body and gender of the patient are interlinked and have strong association with each other. Educating the caregivers about these common trends and association can reduce the incidence of cases of foreign body impaction in the ear, nose and throat region.

REFERENCES

- Sarkar S, Roy CA, Roy BK. Foreign bodies in ENT in a teaching hospital in Eastern India. *Indian J Otolaryngol Head Neck Surg* 2010; 62(2):118–120.
- Rishi B, Manita P, Ramesh P. Types of Foreign Body In Ear, Nose And Throat In Western Part Of Nepal. *Glob J Oto* 2017; 4(3): 555640.
- Shrestha I, Shrestha BL, Amatya RCM. Analysis of Ear, Nose and Throat Foreign Bodies in Dhulikhel Hospital. *Kathmandu Univ Med J* 2012;38(2):4-8.
- Digra SK, Kishore K, Digra KK, Slathia SS. Ear and aerodigestive tract foreign body in children in a tertiary care centre in north India. *JEMDS* 2017; 6(87):5997-6000. 3.
- Heim SW, Maughan KL. Foreign bodies in the ear, nose, and throat. *Am Fam Phys* 2007;76(8):13-8.
- Parajuli R. Foreign bodies in the ear, nose and throat: an experience in a tertiary care hospital in central Nepal. *Int Arch Otorhinol* 2015;19(2):121-3.
- Adedeji TO, Sogebi OA, Bande S. Clinical spectrum of ear, nose and throat foreign bodies in North Western Nigeria. *Afr Health Sci* 2016; 16(1):292-7.
- Kamran M. Foreign Bodies in Ear, Nose and Throat-A Clinical Audit. *J Rawal Med Coll* 2017; 21:72-4.
- Hafeez M, Zakirullah, Inayatullah Foreign body nose in children presenting at a tertiary care teaching hospital in Pakistan. *Pak J Med Sci* 2011;27(1):124-127.72-4.
- Foreign Bodies in Ear - Its Type, Diagnosis and Management. *J Liaquat Uni Med Health Sci.* 2015;14(02):86-9.
- Mukherjee A, Haldar D, Dutta S, Dutta M, Saha J, Sinha R. Ear, nose and throat foreign bodies in children: a search for socio-demographic correlates. *International journal of pediatric otorhinolaryngology.* 2011 Apr 30;75(4):510-2.
- Ologe FE, Dunmade AD, Afolabi OA. Aural foreign bodies in children. *Indian J Pediatr.* 2007;74(8):755-758.
- Kadish H. Ear and nose foreign bodies: It is all about the tools. *Clin Pediatr (Phila)* 2005;44:665-70
- Ribeiro da Silva BS, Souza LO, Camera MG, Tamiso AGB, Castanheira VR. Foreign bodies in otorhinolaryngology: a study of 128 cases. *Int Arch Otorhinolaryngol* 2009;13(4):394–9.
- Hon SK, Izam TM, Koay CB, Razi A. A prospective evaluation of foreign bodies presenting to the Ear, Nose and Throat Clinic, Hospital Kuala Lumpur. *Med J Malaysia* 2001' 56(4): 463-70
- Endican S, Garap JP, Dubey SP. Ear, nose and throat foreign bodies in Melanesian children: an analysis of 1037 cases. *Int J Pediatr Otorhinolaryngol* 2006;70(9):1539-45.
- Kumar S. Management of foreign bodies in the ear, nose and throat. *Emerg Med Australas* 2004; 16(1): 17-20.8.
- Ryan C, Ghosh A, Wilson-Boyd B, O'Leary S. presentation and management of aural foreign bodies in two Australian emergency departments. *Emerg Med Australas.* 2006; 18(4): 372-8.
- Adhikari P, Shrestha BL, Baskota DK, Sinha BK. Accidental foreign body ingestion: analysis of 163 cases. *Int Arch Otorhinolaryngol* 2007;11(3):267–70.
- Despres N, Lapointe A, Quintal MC, Arcand P, Giguere C, Abela A. 3-Year impact of a provincial choking prevention program. *J Otolaryngol.* 2006;35(4):216–1

