



FOREIGN BODY EAR AND NOSE IN PATIENTS ATTENDING A TERTIARY CARE HOSPITAL-OUR TWO YEAR EXPERIENCE.

Younus Majeed Dar	Contributed equally, Resident, Department of ENT & HNS, Shri Maharaja Hari Singh Hospital, Govt Medical College Srinagar. J&K-19004.
Seerat Bashir	Contributed equally, Resident, Department of ENT & HNS, Shri Maharaja Hari Singh Hospital, Govt Medical College Srinagar. J&K-19004.
Ihsan Ali*	Associate Professor, Department of ENT & HNS, Shri Maharaja Hari Singh Hospital, Govt Medical College Srinagar. J&K-19004. *Corresponding Author

ABSTRACT

Background: Foreign bodies (FBs) in the ear and nose are relatively frequent emergencies seen in the ENT emergency and OPD. The FBs in the ear and nose are more common but not limited to children and mentally challenged adults. The most common ear and nose foreign bodies include plastic toys, food, and small household items. Majority of FBs are harmless but few like insects and sharp objects are extremely uncomfortable requiring emergency removal.

Aims: and Objectives: In the current study we aimed to evaluate the common types, prevalence, age of presentation, sex predilection, clinical presentations, treatment approaches used and complications during extraction of ear and nose FBs in patients presenting FB induced emergency.

Methods: The current study was a prospective study carried out for 2 years (June 2019-June 21). All the subjects attending Sri Maharaja Hari Singh Hospital (SMHS), Government Medical College Srinagar (J&K) presenting ear and nose FBs induced emergency, were enrolled in the current study. All the relevant demographic, clinical, and therapeutic modalities of each patient were recorded and then analysed using statistical software (SPSS version 14.)

Results: A total of 770 subjects were recruited in the study with nearly equal males and female representation. The majority of cases (~70%) were in the age group of <10 years in both the genders. Majority of the cases were from urban areas. Among all the subjects recruited, a greater number of subjects had FB in ear (~63%), while as 37% had FB in the nose. About 5% of the subjects reported FB bilaterally in the ears. Paper was the prevalent nose FB, while as bead was found pervasive in the ear. Only 4.5% subjects needed general anaesthesia for the removal of FB, while as only 10.8% experienced bleeding during the FB removal.

Conclusion: Foreign body ear and nose pose a common ENT emergency in the clinic and are usually presented in the young subjects. Unlike, the FB in the nose, the ear FB can be more harmful by causing tympanic membrane perforation. The treatment modalities for ear and nose FB removal depends upon the type and place of FB impaction in the subject.

KEYWORDS : Ear and nose; emergency; foreign bodies; ingestion; Kashmir

INTRODUCTION

Any object that is placed in the ear and nose that is not supposed to be there and can be harmful is known as foreign body. Foreign bodies (FBs) in ear and nose are common ENT emergencies pervasive but not limited to children and mentally challenged adults[1]. FBs can be impacted deliberately or accidentally in both children as well adults. The FBs are more common in younger children due to several factors including their curiosity of exploration, boredom, playing, imitation, mental illness and related disorder, and availability of the small objects and absence of caregivers[2]. In adults insects in the external auditory canal are most common and often dramatic as buzzing sound and movements are very loud and painful. The most common ear and nose foreign bodies include beads, pebbles, pieces of toys, and popcorn kernels, insects etc. FBs in ear and nose may vary widely in shape, size, and composition and the associated symptoms may range from asymptomatic to life threatening situations[3]. In normal adults FB impaction ear results while cleaning or scratching the ear canal, using ear-phone or ear-buds, while working on paddy field and patients on hearing-aid. More often, the FBs are annoying to the patient and rarely present a true medical emergency[4]. Common symptoms are pain, discomfort and hearing impairment(in FB ear). FB nose, a common condition which can be managed easily, if detected early. Neglected FB nose presents with foul smelling nasal discharge, unilaterally.

Most of the ear and nose FBs can be removed swiftly and smoothly. However, certain FBs, including batteries and magnets, pose a serious damaging risk to the patient and needs to be removed as soon as possible to reduce the

damage[5, 6]. Like other FB removal procedures, the impacted FB in the ear and nose need proper patient preparations and expertise of the clinician to minimise the complications associated[7]. Many a times if the patient's first contact is a non-professional who attempts to remove the FB without the proper technique, it would lead to harm rather than benefit, as in case of FB ear leading to bleeding and/or tympanic membrane perforation. The graspable objects are easily removable and are less likely to require any advance techniques for removal. It is critical to refrain from clamping down on fragile objects, which may crumble and become more difficult to remove later on [7].

FB in the nose or ear is usually unilateral, although it can be bilateral as well. The approach pursued to remove FB from the nose, or the ear is defined by the nature of the object. It is important to be adept in executing the procedure. Nice visualization of the FB and the surrounding anatomy is critical and immobilization of the patient (especially children) might be required for the successful outcome[1]. In current study we aimed to evaluate the prevalence and patterns and methods of removal for the impacted FBs in the nose and ear of the subjects attending a tertiary care hospital in Kashmir, India.

METHODS:

A prospective cross-sectional study was conducted in the Government Medical College, Srinagar, and Associated Hospitals; (Sri Maharaja Hari Singh Hospital (SMHS), Srinagar J&K) – a large tertiary care hospital of northern India. All the patients who presented between July 2019 to July 2021, directly in the Department of ENT and Head & Neck Surgery, SMHS or referred from other hospitals were enrolled for the

current study. A detailed data collection form was used to capture the relevant information including demographic, clinical, and therapeutic modalities of each patient during the study. Study was reviewed and approved by the ethics committee of the Institute and the identity of the patients was kept confidential. The subjects who refused to participate were excluded from the study.

Statistical Analysis:

The data was presented as number and percentages in the categorical variables. All the data was analysed by IBM SPSS software (SPSS Inc. version 25).

Table 1: Baseline Characteristics

Age group	Female	Male	Total
<10	254 (67.9)	279 (70.5)	533 (69.2)
11-20	45 (12.0)	30 (7.6)	75 (9.7)
21-30	27 (7.2)	35 (8.8)	62 (8.1)
31-40	16 (4.3)	22 (5.6)	38 (4.9)
41-50	14 (3.7)	17 (4.3)	31 (4.0)
>50	18 (4.8)	13 (3.3)	31 (4.0)
Total	374 (48.5)	396 (51.4)	770 (100)
Residence			
Urban	219 (58.6)	204 (51.5)	423 (54.9)
Rural	155 (41.4)	192 (48.5)	347 (45.1)
Foreign Body Nose N= 286 (37.1%)			
Left	76 (51.4)	80 (58.0)	156 (54.5)
Right	72 (48.6)	58 (42.0)	130 (45.5)
Total	148	138	286
Foreign Body Ear N = 484 (62.9%)			
Left	85 (37.6)	91 (35.3)	176
Right	127 (56.2)	156 (60.5)	283
Bilateral	14 (6.2)	11 (4.3)	484

RESULTS

A total of 770 subjects were recruited in the study with nearly equal males and female representation over a period of two years. Most cases (~70%) were in the age group of < 10 years in both males as well females. More number of cases were urban habitants. Among all the subjects recruited, a greater number of subjects had FB impacted in ear (~63%), while as 37% had FB impaction in nose. About 5% of the subjects reported FBs bilaterally in the ears. Paper was the prevalent nasal FB, while as bead was found pervasive in the ear, followed by cotton bud and matchstick (Tables 2&3).

Table 2: Foreign bodies in Nose among different age groups

	<10 N=248	11-20 N=13	21-30 N=11	31-40 N=4	41-50 N=3	>50 N=5	Total N=284
Eraser	1(0.4)	0(0)	0(0)	0(0)	0(0)	0(0)	1(0)
Battery cell	5(2)	0(0)	0(0)	0(0)	0(0)	0(0)	5(1.8)
Bead	20(8.1)	3(23.1)	2(18.2)	1(25)	2(66.7)	0(0)	28(9.9)
Corn	15(6)	1(7.7)	4(36.4)	0(0)	0(0)	1(20)	21(7.4)
Cotton	4(1.6)	0(0)	0(0)	0(0)	0(0)	0(0)	4(1.4)
Date seed	4(1.6)	0(0)	0(0)	0(0)	0(0)	0(0)	4(1.4)
Eraser	13(5.2)	3(23.1)	0(0)	1(25)	0(0)	0(0)	17(6)
Garlic	11(4.4)	1(7.7)	0(0)	0(0)	0(0)	0(0)	12(4.2)
Lead tip	3(1.2)	0(0)	0(0)	0(0)	0(0)	0(0)	3(1.1)
Metallic ball	6(2.4)	0(0)	0(0)	0(0)	0(0)	0(0)	6(2.1)
Nose pin	0(0)	1(7.7)	0(0)	0(0)	0(0)	1(20)	2(0.7)
Paddy	2(0.8)	1(7.7)	1(9.1)	1(25)	1(33.3)	2(40)	8(2.8)
Paper	62(25)	0(0)	0(0)	0(0)	0(0)	0(0)	62(21.8)
Pea	11(4.4)	1(7.7)	1(9.1)	0(0)	0(0)	0(0)	13(4.6)
Peanut	1(0.4)	0(0)	0(0)	0(0)	0(0)	0(0)	1(0.4)
Polythene	40(16.1)	1(7.7)	0(0)	0(0)	0(0)	0(0)	41(14.4)
Seed	7(2.8)	0(0)	1(9.1)	0(0)	0(0)	0(0)	8(2.8)
Stone	14(5.6)	1(7.7)	1(9.1)	1(25)	0(0)	1(20)	18(6.3)
Straw	2(0.8)	0(0)	1(9.1)	0(0)	0(0)	0(0)	3(1.1)

Vegetable leaf	24(9.7)	0(0)	0(0)	0(0)	0(0)	0(0)	24(8.5)
Wood	3(1.2)	0(0)	0(0)	0(0)	0(0)	0(0)	3(1.1)

Table 3: Foreign bodies in ear among different age groups

Type of Foreign body	<10 N=284	11-20 N=62	21-30 N=51	31-40 N=34	41-50 N=28	>51 N=25	Total N=484
Insect Dead	4(1.5)	4(6.5)	0(0)	2(5.9)	6(21.4)	3(12)	19(4.0)
Bead	71(25)	10(16.1)	4(7.8)	0(0)	0(0)	0(0)	85(17.6)
Corn	11(3.9)	2(3.2)	1(2)	0(0)	0(0)	0(0)	14(2.9)
Corn seed	4(1.4)	0(0)	0(0)	1(2.9)	0(0)	1(4)	6(1.2)
Cotton bud	2(0.7)	14(22.6)	20(39.2)	11(32.4)	3(10.7)	9(36)	59(12.2)
Ear bud	0(0)	3(4.8)	4(7.8)	1(2.9)	2(7.1)	0(0)	10(2.1)
Eraser	30(10.6)	6(9.7)	0(0)	0(0)	0(0)	0(0)	36(7.4)
Garlic	1(0.4)	1(1.6)	0(0)	0(0)	0(0)	0(0)	2(0.4)
Insect Live	0(0)	2(3.2)	1(2)	4(11.8)	4(14.3)	3(12)	14(2.9)
Matchstick	0(0)	8(12.9)	15(29.4)	8(23.5)	1(3.6)	4(16)	36(7.4)
Metallic ball	13(4.6)	1(1.6)	0(0)	0(0)	0(0)	0(0)	14(2.9)
Paddy	5(1.8)	1(1.6)	3(5.9)	6(17.6)	7(25)	5(20)	27(5.6)
Paper	12(4.2)	0(0)	0(0)	0(0)	0(0)	0(0)	12(2.5)
Pea	23(8.1)	4(6.5)	0(0)	0(0)	0(0)	0(0)	27(5.6)
Pencil lead	23(8.1)	1(1.6)	1(2)	0(0)	0(0)	0(0)	25(5.2)
Seed	48(16.9)	3(4.8)	1(2)	0(0)	2(7.1)	0(0)	54(11.2)
Stone	36(12.7)	2(3.2)	1(2)	1(2.9)	0(0)	0(0)	40(8.3)
Straw	1(0.4)	0(0)	0(0)	0(0)	3(10.7)	0(0)	4(0.8)

Both the ear and nose FBs of more than 34% of subjects were removed by Jobson Home Probe and/or Alligator micro-forceps. Only 4.5% subjects needed general anaesthesia for the removal of FB, while as only 10.8% experienced bleeding during the FB removal. Two subjects (0.3%) experienced tympanic membrane perforation alone, while as 5 subjects (0.6%) experienced bleeding and tympanic membrane perforation (Table 4).

Table 4: Details of FB removal procedures done

	FB Nose N=286	FB Ear N=484	Total N=770
FB removal instrument used			
Alligator Forceps	91 (31.8)	103 (21.3)	194 (25.2)
Alligator Forceps + Suction	4 (1.4)	7 (1.4)	11 (1.4)
Granulation Forceps	72 (25.2)	90 (18.6)	162 (21.0)
Granulation Forceps + Suction	5 (1.7)	21 (4.3)	26 (3.4)
Jobson Home Probe	98 (34.3)	172 (35.2)	270 (35.1)
Jobson Home Probe + Alligator Forceps	1 (0.3)	1 (0.2)	2 (0.3)
Jobson Home Probe + Granulation Forceps	1 (0.3)	0	1 (0.1)
Jobson Home Probe + Suction	14 (4.9)	63 (13.0)	77 (10.0)
Suction + Jobson Home Probe + Granulation Forceps	0	15 (3.1)	15 (1.9)
Syringing	0	10 (2.1)	10 (1.3)
Syringing + Alligator Forceps	0	2 (0.4)	2 (0.3)
Complications in Foreign Body Removal			
None	278 (97.2)	402 (83.1)	680 (88.3)
Bleeding	8 (2.8)	75 (15.5)	83 (10.8)
Tympanic membrane perforation	0	2 (0.4)	2 (0.3)

Bleeding + Tympanic membrane perforation	0	5 (1.0)	5 (0.6)
Anaesthesia requirement			
No anaesthesia	286 (100)	449 (92.8)	735 (95.5)
General Anaesthesia	0	35 (7.2)	35 (4.5)

DISCUSSION

The current study with a relatively large study sample found that ear and nose FB were prevalent in the younger subjects with FB impaction in ear more common than nose. While as a variety of foreign objects were reported in our cohort, paper and bead were prevalent in nose and ear respectively. Jobson Home Probe was the most useful tool in removing the FB from both ear and nose. A small number of subjects developed any complication with the procedure.

While as the FB impaction in adults is usually accidental, children are thought to have a natural tendency to lodge objects into the natural orifices of body, accidentally or intentionally. Therefore, unlike adults, the prevalence of FB impaction in ear and nose in the children is not uncommon, and similar results have been reported earlier as well[3, 8-10]. Moreover, mental health of the subject also plays an important role in the FB impaction be it nose ear or throat.

In the current study we found that the prevalence of ear and nose FB impaction was marginally higher in the urban areas than rural areas and the ear was the most affected organ than nose. Earlier studies have also reported high prevalence of FB is ear than nose[3, 11]. Young children not only insert objects in their ears but also into the ears of their siblings and friends. Common ear FBs include paper, cotton wool, bead, eraser, insect, and polythene. In many cases the FB remain asymptomatic, but post-impaction, subjects usually present with irritation, earache, aural fullness, ear discharge and hearing impairment. The asymptomatic FB are usually found incidentally during routine otoscopic examination in the clinics [3].

Different clinicians use various approaches to remove the foreign bodies from the ear and nose. However, the choice depends upon the clinical presentation, type of the FB, site of impaction, age of the patient and expertise of the clinician[12]. The treatment modalities include irrigation, use of forceps and suctioning [1, 13]. Irrigation in the subjects presenting battery Impaction should not be used to avoid the current induced damage in the tissue[14]. In the current study the Jobson Home Probe was the most useful tool in removing the FB from both ear and nose, plausibly because the paper and bead were the most frequent FBs.

Graspable FBs in ear and nose are easy to remove in comparison to non-graspable FBs that include beads, pebbles, etc. The non-graspable FB have lower success rates of the removal and are associated with more complications, particularly canal lacerations and tympanic membrane perforations[15]. However, in our study, while as the bead the most prevalent FB in the ear we were successfully able to remove FBs in 88% subjects without any complications, only 1% of subjects suffered tympanic membrane perforations.

CONCLUSION:

In the current study we found that FB in ear and nose are more common in urban children than rural subjects. Bead and paper were most frequent FB in ear and nose respectively and Jobson Home Probe was the most useful tool in removing the FBs in our cohort. An experienced realisation of the clinical presentation of the patient with FB impaction in is likely result in successful removal and limit complication rates thereof.

Conflict of interests: Declare None

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