



A Retrospective Study of ENT Foreign Bodies in 50 patients at a Tertiary Care Hospital in Navi Mumbai

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Abstract

Ear, nose and throat (ENT) foreign bodies (FBs) are common occurrences, particularly among children. The proper recognition, study, and management of FBs are required to prevent complications. Their consequences are greatly variable, from mild disturbances that may not require hospitalization up to life-threatening complications. In this study, we share our experience in dealing with fifty cases of various types of ENT foreign bodies in the age-groups of 2-60 years. We also analyse the clinical profile of these fifty cases of ENT FBs and share our experience of removal of these foreign bodies.

Keywords: Foreign Bodies, Emergencies, Airway Obstruction.

Introduction

Foreign Bodies (FBs) in the ear, nose and throat are the most commonly seen emergencies for otorhinolaryngologists. They are even commonly seen by paediatricians, emergency physician, family physicians and even in primary health centres⁽¹⁾. Foreign bodies account for approximately 11% of the cases in ENT emergencies⁽²⁻⁴⁾. They look seemingly easy to manage, but they are accompanied by a high potential for morbidity and mortality if managed in correctly and add to the cost of healthcare⁽⁵⁻⁷⁾.

Foreign bodies are liable to be introduced in adults or in children either spontaneously or accidentally.

They are more common in children due to various factors like inherent curiosity in children to explore various orifices, imitation, boredom, intellectual disabilities, insanity, attention deficit hyperactivity disorder, easy availability of objects which may act as foreign bodies and lack of attention by care-givers⁽⁸⁾. Foreign bodies in ENT can have a wide range of outcomes ranging from mild discomfort to death. The outcome is related to various factors like chemical composition of the FBs, shape, size, time and the size of lodgement⁽⁹⁾. The different types of foreign bodies (FB) are classified as living and non-living. The non-living ones are categorized into organic and inorganic.

Removal of foreign bodies requires good anatomical knowledge along with certain skills and techniques depending on its location. Many a times, it is possible to remove a foreign body as an OPD procedure, especially if the patient is co-operative, however, quite often, general anaesthesia is needed to remove foreign bodies especially in the paediatric age group.

In the developed world, there are established and continually evolving protocols for the management whereas in the developing countries such protocols do not exist. Many people owing to general lack of awareness resort to self-treatment, without contacting professionals to save time, money, thinking it to be a minor ailment, lack of otolaryngologists and thus lead to complications⁽¹⁰⁻¹³⁾. FB removal can require instruments which are as simple as aural syringes, foreign body hooks and wax probes, to complex instruments like endoscopes, laryngoscopes and ventilating bronchoscopes.

In this study we discuss our experiences of managing ENT FBs which presented to our hospital and to analyse FBs in terms of type, site, age, and gender distribution, method of removal, outcomes and complications.

Materials and Methods

This is a retrospective study which was conducted in a tertiary care hospital at Navi Mumbai amongst 50 patients who presented to the OPD and emergency services of our hospital over a period of 6 months between June 2016 to November 2016. Patients between the age groups of 2 years to 60 years were included in the study. Patients with Ear, Nose or Throat foreign bodies were included in this study. The patients included in this study presented with complaints of foreign bodies in the ear, nose or throat. Detailed history was taken for all the patients included in the study and detailed ENT examination was done for all the patients. Patients who presented with ear foreign bodies underwent otoscopic examination, patients who presented with complaints of nasal foreign bodies underwent anterior rhinoscopy and

if needed diagnostic nasal endoscopy to determine the location of the foreign bodies. Patients who presented with throat (laryngeal and oesophageal) foreign bodies underwent rigid laryngoscopy and if needed underwent further radiological examinations like X-ray or CT. The patients then underwent removal of foreign bodies in the OPD or in the Operation theatre depending on the co-operation offered by the patient and the site of the foreign body. Ear foreign bodies were removed by syringing or by help of aural instruments. Nasal foreign bodies were removed with a wire vectis or with the help of endoscopic instruments if the foreign body was deeply entrenched. The patients with throat foreign bodies underwent either rigid esophagoscopy or rigid bronchoscopy to remove the foreign bodies, however patients with superficial throat foreign bodies like in the tonsillar fossa underwent removal in the OPD with endoscopic control. The foreign bodies removed were classified as organic or inorganic, and the organic foreign bodies were further classified into living or non-living. FBs were then classified based on the site of their lodgement, method of removal and whether the patient needed to be anaesthetized for FB removal.

Data which was collected was then tabulated and analysed with Microsoft Office Excel 365 software.

Results

Sex of Patients

There were 28 males and 22 females included in the study. A male preponderance of 1.27:1 was seen in this study. All the patients included in the study had a ENT foreign body.

Table 1: Sex of Patients (n=50)

Gender	Number
Male	28 (56%)
Female	22 (44%)

Age of patients

In this study, patients in the age group of 2-60 years in age were considered. Maximum number of patients included in the study were in age group of 2-10 years and the age group of 51-60 was the least represented in the study.

Table 2: Age of Patients (n=50)

Age in Years	Number
2-10	30 (60%)
11-20	7 (14%)
21-30	4 (8%)
31-40	4 (8%)
41-50	3 (6%)
51-60	2 (4%)

Types and Locations of Foreign Bodies seen

In the study, 28 patients had an organic foreign body and 22 patients were non-organic. Amongst the 28 organic foreign bodies, 25 were non-living and 3 were living foreign bodies. None of the patients included had more than one foreign body.

In our study, 13 organic ear FBs were seen out of which all three living organic FBs were seen in the ear, and 10 inorganic ear FBs were seen in our study. In total in our study we had 23 ear foreign bodies.

In our study, 12 organic nose FBs were seen, and 8 inorganic ear FBs were seen. In total we had 20 nasal foreign bodies.

In our study, 3 organic throat foreign bodies were seen, and 4 inorganic throat foreign bodies were seen. In total we had 7 throat foreign bodies.

Table 3: Types of Foreign Bodies (n=50)

Type of Foreign Bodies	Number
Organic	28 (56%)
Non-organic	22 (44%)

Table 4: Types of Organic Foreign Bodies (n=28):

Type	Number
Living	3 (10.7%)
Non-living	25 (89.3%)

Table 5: Location of Foreign Bodies

Location of Foreign Body	Number
Ear	23 (46%)
Nose	20 (40%)
Throat	7 (14%)

Types of Foreign Bodies in Relation to Location

In our study, the organic foreign bodies were more commonly found in the ear and nose, whereas the presence of in-organic foreign bodies was higher in the throat.

In our study, all the 3 living foreign bodies were seen in the ears only

Table 6: Relation of types of Foreign Bodies with respect to location

Type of Foreign Body	Location of Foreign Body		
	Ear (n=23)	Nose (n=20)	Throat (n=7)
Organic (n=28)	15	11	2
In-organic (n=22)	8	9	5

Location and Type of Foreign Body in relation to Age

In our study, ear foreign bodies were maximally seen in the age group of 2-10 years and seen the least in the age group of 11-20, 41-50 and 51-60. Amongst the 13 organic foreign bodies seen in our study, 7 were seen in the age group of 2-10, 2 each in the age group of 21-30 and 31-40 and each ear foreign body seen in the age group of 41-50 and 51-60 was organic. Amongst the 3 live FBs amongst the 13 organic ear FBs, 1 each was found in the age group of 21-30,31-40 and 41-50. Amongst inorganic foreign bodies, 5 were seen in the age group between 2-10, the singular ear foreign body found in the age group of 11-20 was inorganic and 2 foreign bodies each in the age group of 21-30 and 31-40 were inorganic.

In our study, maximal nasal foreign bodies were seen in the age group of 2-10 years and no nasal FBs were seen in the patients between the ages of 21-60. In the age group of 2-10, out of the 15 foreign bodies, 10 were organic FBs and 5 were inorganic. In the age group of 11-20, 2 organic and 3 inorganic nasal FBs were seen.

In our study, throat (oesophageal + laryngeal) FBs were seen maximally in the age group of 2-10 years with no throat FBs seen in the ages of 21-40 years. Amongst organic throat FBs, 2 were seen in the age group of 2-10 and one was seen in the age group of 51-60. Amongst inorganic FB's, one each was seen in the age group of 2-10 and 11-20 and two were seen in the age group of 41-50.

Table 7: Relation between age and location of FBs.

Age Group (in years)	Location of Foreign Body		
	Ear	Nose	Throat
2-10	12	15	3
11-20	1	5	1
21-30	4	0	0
31-40	4	0	0
41-50	1	0	2
51-60	1	0	1

Management of Foreign Bodies

In our study, 21 (42%) patients needed anaesthesia to facilitate foreign body removal and 29 (58%) patients allowed removal without anaesthesia.

A: Ear Foreign Bodies

Out of the 23 patients with ear foreign bodies, 10 required FB removal under anaesthesia and all of them were in the age group of 2-10. None of the patients aged between 11-60 needed removal under anaesthesia. All the patients who had live organic FBs had FB removal done without anaesthesia.

Table 8: Management of Ear Foreign Bodies

Age of Patients with Ear FBs	Technique of Removal	
	Anaesthetized	Non-Anaesthetized
2-10	10	2
11-20	0	1
21-30	0	4
31-40	0	4
41-50	0	1
51-60	0	1

B: Nose Foreign Bodies

Out of the 20 patients with nasal foreign bodies, 8 required removal under anaesthesia. Majority of the patients in the age group 11-20 years required removal under anaesthesia whereas just 5 patients in the age groups of 2-10 needed anaesthesia prior to nasal FB removal. It is worth mentioning, that in all the 12 patients where nasal FBs were removed without anaesthesia, the FB was in the nasal vestibule. Hence it was easy to visualize and remove the foreign body under direct vision. In the patients where anaesthesia was given prior to removal, radiological investigation was done to gauge the exact location of the FB.

Table 9: Removal of Nasal Foreign Bodies

Age of Patients with Nasal FB's	Technique of Removal	
	Anaesthetized	Non-Anaesthetized
2-10	5	10
11-20	3	2
21-30	0	0
31-40	0	0
41-50	0	0
51-60	0	0

C: Throat Foreign Bodies

Out of the 7 patients with throat FBs, 3 required anaesthesia prior to FB removal. All the patients who needed anaesthesia were in the age group of 2-10 years. None of the patients in the ages of 11-60 needed anaesthesia for throat FB removal. It should be noted that the throat FBs in the ages of 11-60 were in the tonsillar fossae and hence under vision the FBs could be removed.

Table 10: Removal of Throat Foreign Bodies

Age of Patients with Throat FBs	Technique of Removal	
	Anaesthetized	Non-Anaesthetized
2-10	3	0
11-20	0	1
21-30	0	0
31-40	0	0
41-50	0	2
51-60	0	1

Discussion

A: Age and Sex of the patients

In our study, 28 (56%) patients studied were males and 22 (44%) patients studied were females. A male to female preponderance of 1.27:1 was noted. This was like the study by Mangussi-Gomes et al where 53.5% patients seen were male⁽¹⁴⁾. Similarly, in the study conducted by Shreshta et al, 58.9% patients seen were males⁽⁸⁾. In the study by Awad et al, 56.7% patients included were males, which is in agreement to our study⁽¹⁵⁾.

In our study, approximately 30 (60%) cases belonged to the paediatric age group whereas the least number of patients included were in the age group of 51-60. It was similar to the study done by Mangussi-Gomes et al, where the peak incidence was seen in the first decade of life⁽¹⁴⁾. In the

study conducted by Awad et al, 76.4% cases were in the age-group of 2-20 years which was in agreement to our study where 74% patients belong to the age-group of 2-20 years⁽¹⁵⁾. In the study conducted by Shreshta et al, 75.9% cases belong to the age-groups of 75.9%, whereas in our study we observed an incidence of foreign bodies in 74% patients, who belonged to the age-group of 2-20 years⁽⁸⁾. In literature, we have observed that 50.1% of all ENT foreign bodies reported were in the age below eight, which is in broad agreement to our study where 60% patients belong to age group of 2-10 years^(2,10,16).

B: Types and Locations of Foreign Bodies seen.

In our study, 23 (46%) FBs were ear FBs, 20 (40%) were nasal FBs and 7 (14%) were throat FBs. In the study by Mangussi-Gomes et al, 64.4% FBs were in the ear, 19.5% FBs were in the nose and 8.9% FBs were in the throat⁽¹⁴⁾. This was not in agreement to our study. In the study conducted by Awad et al, 53.7% FBs were throat FBs, 18.95% were nasal FBs and 24.68% were aural FBs⁽¹⁵⁾. This again was not in agreement with our study. In the study conducted by Shreshta et al, 47.4% FBs were aural, 26% were nasal and 29.25% were throat FBs. This was in partial accordance to our studies⁽⁸⁾. Some authors suggested the following specific order of frequency and location of foreign bodies: ears, nose, pharynx, oesophagus, and tracheal bronchial tree which is in agreement to our study^(17,18).

In our study, 28 (56%) patients had an organic foreign body while 22 (44%) had non-organic foreign body. There were 25 (50%) non-living and 3 (6%) living foreign bodies amongst the 28 organic foreign bodies. Hence in our study we had 57 (94%) non-living foreign bodies and 3 (6%) living foreign bodies. In the study conducted by Shreshta et al, 96.16% FBs were non-living, and 3.84% FBs were living FBs, also there were 48.7% inorganic FBs and 47.4% organic FBs, which is in broad agreement to our study⁽⁸⁾.

C: Management

21 (42%) patients in our study needed anaesthesia for foreign body removal in our study and 29

(58%) needed no anaesthesia for removal of FBs. Out of the 21 patients who needed anaesthesia, 10 (20%) were Ear FBs, 5 (10%) were nasal FBs and 3 (6%) were throat FBs. Amongst the 23 ear FBs, 10 (43.47%) needed anaesthesia, amongst the 20 nasal FBs, 8 (40%) needed anaesthesia and amongst the 7 cases of throat FBs, 3 (42.85%) needed anaesthesia. In the study conducted by Mangussi-Gomes et al, only 4.4% patients required anaesthesia to facilitate removal, which was not in accordance to our study⁽¹⁴⁾. In the study conducted by Awad et al, 13.6% ear FBs needed anaesthesia, 14.6% nasal FBs needed anaesthesia and 85.66% throat FBs needed anaesthesia, this was not in accordance to our study⁽¹⁵⁾. In literature, approximately 30% of all ENT FBs need anaesthesia prior to removal, which is in broad agreement to our study^(3,19,20).

Conclusion

ENT foreign bodies appear seemingly easy to remove; hence we see attempts being made by untrained individuals to remove them. Not only does this make it difficult for the otorhinolaryngologists to remove, but it also puts the patients at higher chances of morbidity or even mortality. A thorough examination using all available investigative armamentarium needs to be done in cases of deeply entrenched foreign bodies especially of the nose and throat to obtain an idea about the depth of the foreign body and to know its exact location, as they can lead to life threatening complications like airway obstruction. We also need to understand that if we attempt to remove a foreign body in an uncooperative patient, we may end up pushing the foreign body deeper leading to further complications, hence in such patients, anaesthesia must be given prior to removal, especially when the foreign body is in the nose or throat. Protocols need to be developed for foreign body removal in developing communities where we encounter majority cases of ENT foreign bodies to decrease the morbidity/mortality associated with them to decrease the overall health care cost of a

community. A larger multicentre study needs to be done to study the prevalence and epidemiology of ENT foreign bodies in the community in order to develop targeted protocols for ENT foreign body management.

Conflict of Interest: The authors declare no conflict of interest in this study.

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