Section: ENT and HNS

Original Research Article

STUDY OF PATIENTS HAVING FOREIGN BODIES IN EAR, NOSE AND THROAT AT TERTIARY CARE CENTRE

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ABSTRACT

Background: Foreign bodies in the ear, nose, and throat (ENT) are common emergencies, particularly in children. Foreign body is an object or substance foreign to the location where it is found. The present study aims to determine the causes and prevalence of foreign bodies in the ear, nose, and throat, as well as the age and gender distribution of affected patients. It also seeks to identify the most common types and locations of foreign body impaction, complications, diagnostic investigations, and treatment modalities used. **Materials and Methods:** A hospital-based observational study was conducted over 18 months, involving 120 patients with a history of foreign body impaction. Data were collected through detailed histories, clinical examinations, and necessary investigations. **Results:** Results indicated that 58.34% of patients were aged 0-10 years, with the left ear being the most common site of impaction (22.5%). Pain was the predominant symptom (53.33%), and 96.67% of cases were accidental. Most patients experienced no complications (95.8%). **Conclusion:** The findings highlight the significant prevalence of foreign bodies in the ear, nose, and throat, particularly among children under 10 years of age. Pain was the predominant symptom reported, and most patients experienced no complications following removal. The findings underscore the importance of awareness and prompt intervention in managing foreign body incidents in pediatric populations.

INTRODUCTION

Foreign body is an object or substance foreign to the location where it is found.[1,2] Foreign bodies in ear, nose and throat is the most common problem encountered in outpatient clinic of otorhinolaryngology department and the emergency department. It is commonly seen in children who have the habit of inserting nearby objects in their nose, ear or mouth. Foreign bodies in the ear and aero digestive tract are a common emergency globally in otorhinolaryngology and remain to be the main cause of morbidity and mortality especially in children under 3 years.[3] Despite public awareness and improvement in medical care worldwide, they still accounts for 11% of ear, nose and throat emergencies.[4]

Various types of foreign bodies (FBs) are encountered in Otorhinolaryngology OPD which are either lodged in the natural orifices of ear, nose, throat, aerodigestive tract or penetrated into the soft tissues of maxillofacial region. Foreign bodies may be of variable types, like metallic pins, screws, pellets, dentures, meat bone, etc. seen in adults and plastic toys, seeds, stones, stationary material, coins and fruit seeds may attract children. The clinician should be highly suspicious whenever a child comes with an episode of sudden cough followed by dyspnoea, dysphagia and excessive salivation. In adults there is a definite history of ingestion or accidental entry in nose or ears.[5] The common causes for foreign bodies lodgement 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]

The complications induced by oesophageal foreign bodies in adults are associated with a high mortality rate and are more common and serious than complications in children. Increasing attention has been focused on complications, mortality, and hospitalization stays; however, the influence of the duration of time from ingestion to effective treatment remains unclear.[3] Diagnosis is often deferred because the causative event is usually undetected, the symptoms are nonspecific, and patients often are misdiagnosed initially. Common removal method includes: forceps, syringing and suctioning for aural

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FB. Ring curette or Eustachian tube catheter for nasal foreign bodies.[6] Contraindications to removing a foreign body from the external auditory canal are related to the patient's cooperativeness, location of the object in the EAC, lack of appropriate instruments for removing the foreign body, and the type of foreign body.[7]

The present study aims to determine the causes and prevalence of foreign bodies in the ear, nose, and throat, as well as the age and gender distribution of affected patients. It also seeks to identify the most common types and locations of foreign body impaction, complications, diagnostic investigations, and treatment modalities used.

MATERIALS AND METHODS

This was a hospital based observational study done 120 patients with history of foreign body came to the OPD in the Department of ENT, Muzaffarnagar Medical College & Hospital, Muzaffarnagar were included in the study by simple random sampling technique during period of 18 months i.e Jan 2023 – June 2024. A detailed history was taken from each patient, including demographic information, symptoms, and duration of the foreign body presence. A thorough clinical examination was performed to diagnose the presence of foreign bodies in the ear, nose, or throat. X-rays were utilized to identify the type and location of foreign bodies in the aerodigestive tract, if necessary. The response to the removal of foreign bodies was evaluated, including any complications or adverse effects experienced by the patients. Ethical approval was taken from the institute's ethical committee and written informed consent was taken from all the participants. Data was expressed in percentages.

Inclusion Criteria

- Patients of all age groups.
- Both sexes.
- Patients who gave consent.

Exclusion Criteria

- Patients who didn't give consent.

RESULTS

In present study, the socio-demographic profile indicated that the majority of participants (58.34%) were aged 0-10 years followed by 20% patients was aged 10-20 years, 20-30 years age group at 10% (12 participants) and the 30-40 and 40-50 age groups each accounted for 5.83% (7 participants each) (table 1). Our study showed that 63 males (52.5%) and 57 females (47.5%), reflecting a slight male predominance and a strong focus on younger age groups (table 2).

Table 3 illustrates the distribution of patients according to the location of foreign bodies revealed that out of 120 cases, the most common sites for the foreign bodies were the left ear (22.5% or 27 cases) and the right ear (21.66% or 26 cases). Other notable locations included the left nose (17.5% or 21 cases) and the right nose (15% or 18 cases).

Pain was the most prevalent, reported by 64 patients (53.33%), followed by bleeding in 33 patients (27.5%) and discharge in 25 patients (20.83%). Other symptoms included excessive salivation (18.33%), vomiting (10%), difficulty in swallowing (2.5%), and difficulty in breathing (0.8%). This data emphasizes the high occurrence of foreign bodies in the auditory and nasal passages and highlights pain as a significant symptom among those affected (table 4).

Table 5 illustrates that the distribution of patients according to investigations revealed that otoscopy and endoscopy were the most commonly used investigations, performed in 53 cases (44.17%), followed by X-ray of the nose and paranasal sinuses in 39 cases (32.5%) and X-ray neck in 25 cases (20.83%). The least used investigation was the CT scan, accounting for 3 cases (2.5%).

Table 6 illustrates that regarding removal methods, the Jobson's Horne ear probe with a ring curette was the most frequently employed technique, utilized in 36 cases (30%), followed by hypopharyngoscope with alligator forceps in 21 cases (17.5%) and microforceps in 25 cases (20.83%). Other methods included syringing (11.67%), ET catheter (3.33%), and various combinations or specialized tools used in smaller proportions, indicating a range of approaches for managing foreign bodies.

The pie chart illustrates that 96.67% of incidents were due to accidental causes, while only 3.33% were attributed to Road Traffic Accidents (RTA). This indicates that accidental incidents were the predominant cause. (Figure 1)

The pie chart illustrates the distribution of complications related to incidents. A significant majority, 95.80% indicated no complications. The remaining complications were minimal, with 1.70% attributed to tympanic membrane (TM) perforation, 1.70% to traumatic perforation, and 0.80% to nasal mucosa erosion. This data suggests that severe complications were rare, with most cases experiencing no adverse effects. (Figure 2)

Table 1: Socio-demographic profile of participants

Age group	Number	Percentage
0-10	70	58.34
10-20	24	20
20-30	12	10
30-40	07	5.83
40-50	07	5.83

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Table 2: Gender distribution

Gender	Number	Percentage
Male	63	52.5
Female	57	47.5

Table 3: Distribution of patients according to location of foreign body (N=120)

Location of foreign body	No. of cases	Percentage (%)
Right ear	26	21.66
Left ear	27	22.5
Right nose	18	15
Left nose	21	17.5
Cricopharynx	19	15.8
Hypopharynx	02	1.67
Premandibular region	03	2.5
Oesophagus	03	2.5
Right bronchus	01	0.01

Table 4: Distribution of patients according to symptoms

Symptom	No. of cases	Percentage (%)
Pain	64	53.33
Bleeding	33	27.5
Discharge	25	20.83
Excessive salivation	22	18.33
Vomiting	12	10
Difficulty in swallowing	03	2.5%
Difficulty in breathing	01	0.8%

Table 5: Distribution of patients according to investigation

Investigation	No. of cases	Percentage (%)
X- Ray Neck	25	20.83
Otoscopy + Endoscopy	53	44.17
X- Ray Nose + PNS	39	32.5
CT Scan	03	2.5
DNE	19	15.8

Table 6: Distribution of method of removal of FB

Method of removal	No. of cases	Percentage (%)
Hypopharyngoscope and alligator forceps	21	17.5
Jobsons Horne ear probe with ring curette	36	30
Microforceps	25	20.83
ET Catheter	04	3.33
Syringing	14	11.67
Syringing + Jobsons probe	02	1.67
Tooth forceps	01	0.83
Jobsons probe + Suctioning	02	1.67
Hartmann's Forceps	03	2.5
Ear victus with cerumen spud	08	6.67
Oesophagoscope and Alligator forceps	03	2.5
Bronchoscope and Alligator forceps	01	0.83

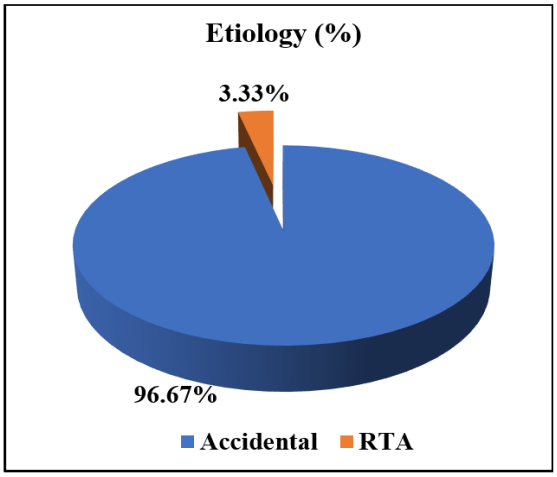

Figure 1: Distribution of patients according to etiology (N=120)

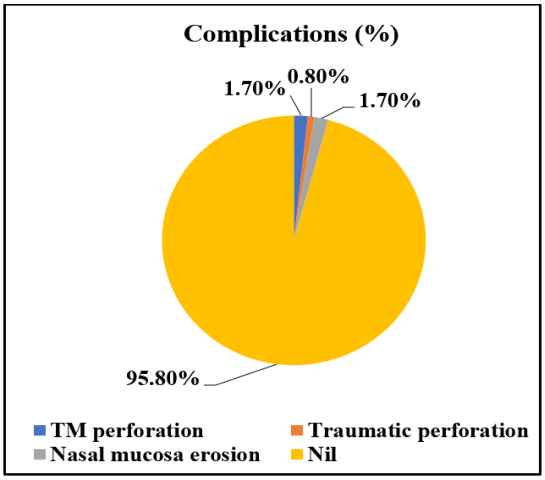

Figure 2: Distribution of patients on the basis of complications

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DISCUSSION

In this study, the majority of patients (58.34%) were below 10 years of age, with a mean age of 13.08 years. This aligns with findings from several studies. Said M et al.[8] conducted a study and reported majority of patients (26.66%) were children between the ages of 0 and 10. Anuja B. et al.[9] conducted a study in 2020 on 105 patients who had been diagnosed with foreign bodies in their throat, nose, or ears. With a minimum age of one year and a maximum age of 75 years, the study subjects' mean age was 24.56+/-20.02 years. The majority (36.2%) were children between the ages of 0 and 10. Parmar SM et al.[6] reported that most frequently impacted age group was less than ten years old. The most frequent locations for foreign bodies in young infants were found to be the ear, followed by the nasal cavity and the throat (oesophageal > inhaled). Paladin et al.[10] noted that foreign bodies in paediatric otorhinolaryngology are predominantly common in children below five years of age. The gender distribution in present study was 52.5% male and 47.5% female. This slight male predominance is consistent with other studies. Said M et al.[8] reported that majority of participants were men (61.33%). Anuja B. et al.[9] noticed a male preponderance (61%). Kwon et al.[11] found that 54.0% of patients with ENT foreign bodies were male. Paladin et al.[10] observed that foreign bodies in paediatric otorhinolaryngology are more prevalent in male children.

In the present study, foreign bodies were most commonly located in the left ear (22.5%) and right ear (21.66%), followed by the left nose (17.5%) and right nose (15%). Parmar SM et al.[6] reported that 83 patients had FBs in their throat, nose, or ears. Out of the 83 patients, 38 (45.7%) had ear FB, 31 (37.34%) had nose FB, and 14 (16.8%) had throat FB. Eleven patients (28.9%) with ear FB and two patients (6.45%) with nose FB had animate (alive) FB. In 14 (100%) of the patients with throat FB, 27 (71.05%) of the patients with ear FB, and 29 (93.54%) of the patients with nose FB, the FB was inanimate (non-living). Said M et al.[8] reported that most frequent finding was a foreign body in the ear, which occurred in 88 instances (58.66%), followed by the nose in 47 cases (31.33%). Kwon et al.[11] found that the throat was the most common location (59.2%), followed by the nose (33.4%) and ears (7.4%). Paladin et al.[10] noted that the nose and ear are the most common sites of foreign bodies.

In present study, pain was reported in 53.33% of cases. According to Paladin et al.[10], pain occurs due to mucosal irritation, tissue inflammation, or mechanical injury caused by sharp or rough foreign bodies. Kwon et al.[11] also reported that foreign bodies in the oesophagus and ear were more likely to cause pain due to pressure on mucosal surfaces. In present study, bleeding was reported in 27.5% of cases. It is primarily caused by sharp-edged foreign bodies such as metal objects, glass pieces, and bones. Kwon et al.[11] stated that improper removal attempts contribute to increased risk of bleeding.

In this study, Otoscopy + Endoscopy (44.17%) was the most commonly used investigation. X-Ray Nose + PNS (32.5%) was the second most common, used primarily in cases where nasal foreign bodies were suspected. CT Scan (2.5%) was performed in cases where a deeper lodged foreign body was suspected. A systematic review by Kwon et al.[11] found that endoscopy was the most preferred method for detecting ENT foreign bodies, particularly in the oesophagus and upper airway. Their study indicated that radiological investigations were only necessary when clinical suspicion was high but direct visualization was difficult.

The Jobson's probe with curette was the most commonly used method (30%), followed by microforceps (20.8%). Paladin et al.[10] found that Jobson's probe was used in 35% of foreign body removals.

The study found that 96.67% of foreign body cases were accidental, with only 3.33% resulting from road traffic accidents (RTA). This high rate of accidental cases is supported by other studies also. Kwon et al.[11] observed that children undergoing a stage of exploratory development have a tendency to place objects in their ears, nose, and mouth. Paladin et al.[10] highlighted that the curious nature of children and their tendency to explore the environment contribute to the high prevalence of foreign bodies.

The present study found that 95.8% of patients did not develop complications, while tympanic membrane perforation (1.7%) and nasal mucosal erosion (1.7%) were the most common complications. Kwon et al.[11] found that 96% of foreign body cases had no complications, but traumatic injuries were reported in 1-2% of cases.

CONCLUSION

In conclusion, this study highlights the significant prevalence of foreign bodies in the ear, nose, and throat, particularly among children under 10 years of age. The majority of cases were accidental, with the left ear being the most common site of impaction. Pain was the predominant symptom reported, and most patients experienced no complications following removal. The findings underscore the importance of awareness and prompt intervention in managing foreign body incidents in pediatric populations.

Limitations of the study: The study's limitations include its reliance on a single tertiary care centre, potentially introducing selection bias. Additionally, the study did not account for long-term follow-up of patients to assess any delayed complications or outcomes.

Relevance of the study: The relevance of this study lies in its comprehensive examination of foreign bodies in the ear, nose, and throat, particularly among

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children, who are the most affected demographic. By identifying the prevalence, common types, and locations of foreign body impaction, as well as the associated symptoms and complications, the study provides valuable insights for clinicians in emergency and outpatient settings. This research emphasizes the need for increased awareness and preventive measures to reduce the incidence of such cases, ultimately contributing to improved patient outcomes and enhanced management strategies in otorhinolaryngology.

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