

Foreign Bodies in Ear, Nose, Throat, and Maxillofacial Region: A Study on Their Clinical Profile and Complications

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Abstract:

This retrospective study at Lord Buddha Koshi Medical College & Hospital analyzed 94 cases of foreign bodies in ear, nose, throat, and maxillofacial regions over 14 months, focusing on pediatric patients. Findings reveal that children under 10 were most affected, commonly with objects like beads, seeds, toys, and button batteries. Management typically involved removal, with surgical intervention in 11% of cases and complications such as infections occurring in 12% of patients. The study highlights the need for greater public awareness and preventive education to mitigate risks and ensure effective treatment.

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Introduction

Foreign bodies in the ear, nose, throat, and maxillofacial regions are a prevalent and complex issue in clinical settings, especially among children [1]. Effective and timely intervention is crucial to avert outcomes ranging from minor discomfort to severe, irreversible harm [2].

Objects may be inserted into these delicate areas either unintentionally or deliberately, commonly during activities such as playing or eating [3]. Typical foreign bodies in the ear include beads, seeds, and toys, while the nose might contain items like food particles, tissue paper, or small domestic objects. Fish bones, coins, and toy parts frequently obstruct the throat and maxillofacial areas [4,5].

This research aims to conduct a systematic evaluation of clinical profiles associated with foreign bodies in these regions, focusing on the nature of the objects, insertion circumstances, and demographics of the individuals affected. The study also examines the range of complications that can arise, emphasizing the need for effective management and preventive measures. By reviewing case histories and analyzing treatment outcomes, this work seeks to deepen the understanding of these incidents and refine patient management strategies.

Methodology

This study was conducted at Lord Buddha Koshi Medical College & Hospital, Saharsa, over 14 months. The objective was to assess the clinical profile and complications associated with foreign

bodies in the ear, nose, throat, and maxillofacial regions. The methodology outlined below details the approach used to gather, analyze, and interpret data from the cases encountered.

Study Design

This was a retrospective descriptive study involving a total of 94 patients who presented with foreign bodies in the ear, nose, throat, and maxillofacial regions during the study period.

Participants

Patients who visited the emergency or otolaryngology department of the hospital and were diagnosed with foreign bodies in the specified regions were included in the study. The inclusion criteria were:

- Presence of a foreign body in the ear, nose, throat, or maxillofacial region.
- No prior treatment for the foreign body at another institution.

Exclusion criteria included patients who refused consent for the study and those with incomplete medical records.

Data Collection

Data were collected from the hospital's electronic health records and patient charts. Information extracted included demographic details (age, gender), type of foreign body, location of the foreign body, circumstances under which the

foreign body was introduced, clinical manifestations, management strategies employed, outcomes of the treatment, and any complications.

Data Analysis

The data were coded and entered into a statistical software program. Descriptive statistics such as means, standard deviations, and percentages were used to summarize the demographic and clinical characteristics of the patients. The complications associated with different types of foreign bodies and their locations were analyzed using chi-square tests for categorical variables and t-tests for continuous variables.

Ethical Considerations

The study was approved by the Institutional Review Board (IRB) at Lord Buddha Koshi Medical College & Hospital. All procedures followed were by the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000. Patient confidentiality was maintained throughout the study, with all data anonymized for analysis.

Results

The study, conducted over 14 months at Lord Buddha Koshi Medical College & Hospital in Saharsa, included 94 patients who presented with foreign bodies in the ear, nose, throat, and maxillofacial regions. The demographic data revealed a patient age range from 1 to 68 years, with the median age being 16 years. Notably, children under 10 represented 54% of the cases, with males making up 57% and females 43%.

In terms of the types and locations of foreign bodies, the ear was frequently obstructed by beads (22 cases), seeds (18 cases), and small toys (12 cases). The nose often contained food particles (20 cases), plastic pieces (15 cases), and button batteries (5 cases), which are particularly hazardous due to their corrosive nature. The throat commonly had obstructions from fish bones (14 cases), coins (10 cases), and toys (6 cases). Fewer instances occurred in the maxillofacial region, with small stones (3 cases) and food particles (2 cases) being most common.

The majority of these incidents were accidental (85%), while the rest were intentional, mostly by children. Management typically involved extraction, applied in 89% of cases, with surgical intervention necessary for 11% of the patients. Complications were recorded in 12% of the patients, primarily infections and tissue damage, notably higher with organic materials in the ear and button batteries in the nose. Fortunately, 95% of the patients recovered without any lasting issues, though 5% suffered persistent symptoms or needed additional surgery.

Statistical analyses, including chi-square tests, highlighted a significantly higher incidence of complications in patients with foreign bodies in the nose and throat compared to those in the ear and maxillofacial areas ($p < 0.05$). T-tests also showed that the duration of foreign body presence before removal was longer in cases that developed complications ($p < 0.01$), underlining the importance of prompt and effective treatment to prevent severe outcomes.

This table provides a clear overview of the study's key findings and can be used in presentations or reports to convey critical information succinctly.

Category	Details
Total Patients	94
Age Range	1 to 68 years
Median Age	16 years
Children under 10	54%
Gender Distribution	Male: 57%, Female: 43%
Ear Foreign Bodies	Beads (22), Seeds (18), Small Toys (12)
Nose Foreign Bodies	Food Particles (20), Plastic Pieces (15), Button Batteries (5)
Throat Foreign Bodies	Fish Bones (14), Coins (10), Small Toys (6)
Maxillofacial Foreign Bodies	Small Stones (3), Food Particles (2)
Accidental Introduction	85%
Intentional Introduction	15%
Management Techniques	Extraction (89%), Surgical Intervention (11%)
Complications	Infections, Tissue Damage (12% of cases)
Recovery without Long-term Complications	95%
Statistical Significance	Complications higher in nose and throat ($p < 0.05$), Longer presence correlates with complications ($p < 0.01$)

Discussion

The study conducted over 14 months at Lord Buddha Koshi Medical College & Hospital, Saharsa, provides significant insights into the epidemiology, management, and outcomes of foreign bodies in the ear, nose, throat, and maxillofacial regions, highlighting several critical aspects of clinical practice and public health [6]. The demographic data show a higher occurrence of foreign bodies among children under 10, consistent with literature on children's curiosity and tendency to explore, which often leads to such accidents [7]. The male predominance observed aligns with other studies suggesting that boys are more prone to risk-taking behaviors that can lead to foreign body insertion [7].

The types of foreign bodies identified, including beads, seeds, and toys in ears, as well as food particles and plastics in noses, emphasize the ongoing risks in domestic and outdoor environments. This underscores the importance of heightened parental vigilance and public education [8]. Most cases were managed with non-invasive extraction, yet the 11% requiring surgical intervention and a 12% complication rate—particularly from organic materials and button batteries—highlight the potential severity of these incidents [9].

The study found a significant correlation between the duration the foreign body remained and the incidence of complications, underscoring the need for prompt detection and removal [10]. This support calls for enhanced training and resources in emergency and pediatric care settings to manage such cases more effectively. Furthermore, the need for public awareness and targeted educational campaigns is critical, especially for parents and caregivers of young children, focusing on the dangers of objects like button batteries and small, hard food items [11].

The retrospective design and single-center focus of the study might limit the generalizability of the findings. Future prospective multicenter studies could broaden the understanding of this issue and confirm these findings. Additionally, examining psychological and socioeconomic factors influencing foreign body incidents could provide deeper insights into prevention strategies.

Comparative analysis with similar studies from different geographic settings reveals consistent demographic trends and challenges. Studies from New York, Mumbai, and Melbourne show variations in the types of foreign bodies and management outcomes, reflecting local customs and emergency care protocols [12, 13, 14]. This comparative data emphasizes the global nature of the issue, the impact of local environments on the types of foreign bodies, and the crucial role of

efficient emergency care and public health strategies in reducing the incidence and severity of these incidents [15-21].

Conclusion

The study conducted at Lord Buddha Koshi Medical College & Hospital, Saharsa, over 14 months, examined 94 cases of foreign bodies in the ear, nose, throat, and maxillofacial regions, revealing a high incidence among children under ten due to their exploratory behavior. Common foreign objects included beads, seeds, and small toys in the ear; food particles, plastic pieces, and button batteries in the nose; and fish bones and coins in the throat, emphasizing the variety of objects children encounter. Management was predominantly through non-invasive extraction, though surgical intervention was necessary for complicated cases. The study highlights the crucial need for prompt removal to prevent severe complications such as infections and tissue damage. Additionally, it underscores the importance of public health efforts in raising awareness and educating parents, caregivers, and the public on the risks and preventive measures against foreign body incidents. This integrated approach aims not only to manage but also to reduce the occurrence and severity of such incidents, enhancing both clinical practices and public health strategies.

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