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Nasal Foreign Bodies: An Observational Study

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Abstract: ***Background: Nasal foreign bodies are a common ENT emergency worldwide, particularly in children. Unless proven otherwise, unilateral foul-smelling nasal discharge in a child indicates the presence of a foreign body in the nose. Many nasal foreign bodies can be easily diagnosed and removed in outpatient settings using anterior rhinoscopy; however, anaesthesia may be required depending on their location and the patient's cooperation. Methods: A prospective observational study of 52 cases involving foreign bodies in the nose was conducted. The clinical evaluation involves anterior rhinoscopy with the thudicum nasal speculum, which usually results in the visualisation of the foreign body. The foreign bodies were then removed with the appropriate instruments, such as a Eustachian tube catheter, forceps, Jobson-Horne probe etc. General anaesthesia was required for patients with impacted, posteriorly placed foreign bodies and who were uncooperative. Data were collected, including the patient's age and gender, mode of presentation, the nature of the foreign body, the mode of treatment and the complications. Results: Fifty-two cases, diagnosed with nasal foreign bodies had presented to us in the department, there were 28 boys and 24 girls (boy: girl ratio 1.16:1).Most children were in the age group 3-6 years 55.77% (n=29) and 73% (n=38) had presented with foreign bodies in their right nostril. In our study the foreign body objects that were removed from the nasal cavity beads were the most common 28% (n=15). The majority of patients 67.3% (n=35) presented in less than 24 hours of the foreign body insertion in the nasal cavity. The majority of patients (96%) were treated in the emergency room for foreign body removal using various methods. In this study, the most common complication associated with nasal foreign body removal was epistaxis, which occurred in 58% (n=30) of patients. Conclusions: Foreign bodies in the nose require immediate attention due to the high risk of aspiration. The child's parents should be advised to be more vigilant, and public awareness campaigns regarding the dangers of nasal foreign bodies should be emphasised.***

Keywords: Nasal, Foreign body, Unilateral, Rhinoscopy, Aspiration

1. Introduction

Nasal foreign bodies are a common Ear, Nose & Throat (ENT) emergency worldwide, particularly in children.[1] These are organic or inorganic substances that are commonly found in children's anterior nares, nasal floor, and meatuses. In the event of aspiration, nasal foreign bodies can be fatal. According to various studies, nasal foreign bodies account for 19-49% of all foreign bodies seen in ENT.[2] They can be unilateral or bilateral, single or multiple, and located at various points in the nose, and many cases are discovered incidentally during the examination of patients with nasal obstructions. Unless proven otherwise, a child's unilateral foul-smelling nasal discharge is indicative of a foreign body in his or her nose. Other symptoms may include epistaxis, nasal obstruction, epiphora, nasal speech, nasal pain, hyposmia, and sneezing.[3]

Many nasal foreign bodies can be easily diagnosed and removed in outpatient settings using anterior rhinoscopy; however, anaesthesia may be required depending on their location and the patient's cooperation. Radiological examinations may be useful in metallic nasal foreign bodies to accurately diagnose the type, size, and exact location in the cavity. In this study, patients with nasal foreign bodies were evaluated and compared to those from the literature in terms of demographics, diagnosis, treatment, and complications.

2. Materials and Methods

A prospective observational study of 52 cases of foreign body in the nose was conducted in Regional Hospital, Kullu, Himachal Pradesh, India, from July 2019 to October 2020. All patients who came to us with a foreign body nose were included. Patients who had complications after having a nasal foreign body removed at a different centre were excluded. The clinical evaluation involves anterior rhinoscopy with the thudicum nasal speculum, which usually results in the visualisation of the foreign body. When the foreign body could not be seen during an anterior rhinoscopy, the patient was sent for diagnostic nasal endoscopy. Once detected, the patient's attendants provided written consent after fully explaining the risks to the child. The foreign bodies were then removed with the appropriate instruments, such as the Eustachian catheter, Forceps, Jobson-Horne probe etc. General anaesthesia is required for patients who have an impacted, posteriorly placed foreign body or are uncooperative. Data was collected, including the patient's age and gender, mode of presentation, nature of foreign body, mode of treatment, outcome, and complications. In the research article, the data was presented as means and percentages.

3. Results

Fifty-two cases, diagnosed with nasal foreign bodies were enrolled for the present study. Amongst the 52 Children that had presented to us in the department, there were 28 boys and 24 girls. The boy to girl ratio was 1.16:1.Most children were in the age group 3-6 years 55.77% (n=29), followed by 6-9 years age group 23.08%(n=12), 0-3 years age group 11.5% (n=6) and 9.6% (n=5) patients were more than 10 years of age. **(Table 1)**

Table 1: Socio-demographic profile of the patients

Age group	
0-3 Years	6
3- 6 Years	29
6-9 Years	12
>10 Years	5
Gender	
Male	28
Female	24

Amongst the patients 73% (n=38) had presented with foreign bodies in their right nostril.
In our study the foreign body objects that were removed from the nasal cavity included beads in 28% (n=15) followed by seeds in 23%(n=12), crayons in 11%(n=6), pearls 10% (n=5), sponge 6% (n=3), stones in 6% (n=3), erasers 6% (n=3), metallic objects 4% (n=2), button 4% (n=2) and battery in 2%(n=1) child. **(Table 2)**

Table 2: Patients on the basis of types of foreign body in nose

Beads	15 (28%)
Seeds	12 (23%)
Crayons	6 (11%)
Pearls	5 (10%)
Sponge	3 (6%)
Stones	3 (6%)
Erasers	3 (6%)
Metallic objects	2 (4%)
Button	2 (4%)
Battery	1 (2%)

Thirty five patients (67.3%) presented in less than 24 hours of the foreign body insertion in the nasal cavity, 25%(n=13) presented within the first one week while the rest presented 8days later. Forty five children (86.5%) presented for a complaint of nasal discomfort or foreign body insertion themselves, or for foreign body impaction discovered by their guardians. Five children (9.6%) presented with rhinorrhea and two children (3.8%) presented for complications, such as foul smelling, purulent discharge, and blood-stained discharge.

Most of patients (96%) were managed in emergency with removal of foreign body by different methods such as using Eustachian tube catheter, Jobson Horne probe 85% (n=44) and Tilley/ Hartman forceps 11% (n=6). Diagnostic nasal endoscopy & subsequent removal of foreign body under general anaesthesia done in 4% (n=2) children.

The most common complication found in this study associated with nasal foreign body removal was epistaxis in 58% (n=30) patients and post extraction nasal trauma i.e mucosal tears in 19% (n=9) patients. 25% however had no complications of whatsoever after foreign body removal.

4. Discussion

In our study, the majority of the patients were under the age of ten. Memis et al.[1] reported similar findings. Our study included 28 boys and 24 girls. Mukherjee et al.[4] found similar results in their study. One possible explanation is that male children are naughtier and more likely to engage in such exploratory acts than their female counterparts.

Among the patients, 38 (73%) had foreign bodies in their right nostril. This could confirm the assumption that the child's dominant hand was responsible for inserting the foreign body. This was consistent with the majority of the literature findings. Leopold et al.[5] and Cetinkaya et al.[6] both found similar results. This could be due to right-handedness.

In contrast to what Ogunleye et al[7] reported in Ibadan, the foreign body objects removed from the nasal cavity in our study included fifteen beads, ten peas, twelve seeds, six crayons, five pearls, three sponges, three stones, three erasers, two metallic objects, two buttons, and one battery. Beads were among the most common. Çelik et al[8] found beads to be more common in their study population.

The majority of foreign bodies, 96%, were removed in the emergency room under direct vision using instruments such as the Eustachian tube catheter and Jobson Horne's probe, with no anaesthesia; the procedures were well tolerated by these children. In our study, only 4% of children needed foreign body removed under general anaesthesia.

The successful removal of a nasal foreign body is dependent on the location, shape, patient cooperation, and the physician's experience. During outpatient interventions, foreign bodies may migrate to the respiratory tract, particularly in young children, causing respiratory failure or death. Chiun et al.[9] reported that 53.4% of their 43 paediatric patients underwent an intervention under general anaesthesia in their study. In our study, only 2 patients (4%) needed foreign body removal under general anaesthesia.

Epistaxis occurred in 58% of cases during foreign body removal, with only one case resulting in blood-stained discharge due to foreign body irritation. Nose bleed was usually mild and resolved on its own.[10]

5. Conclusion

Foreign bodies in the nose are one of the most common emergencies that present to the department of Otorhinolaryngology, requiring immediate attention due to their risk of aspiration. To rule out a foreign body, a thorough clinical examination should be performed, along with a diagnostic nasal endoscopy if necessary. The child's parents should be advised to be more vigilant by avoiding keeping objects that the child could insert into its nostril. Priority is given to health education and public awareness programmes regarding the dangers of nasal foreign bodies.

6. Declarations

Funding: None
Conflict of interest: None
Ethical approval: Written informed consent was obtained from the participants adhering to the Declaration of Helsinki. Required ethical approval was obtained.

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