

Characteristics of Nasal Foreign Body Cases in Dr. Hasan Sadikin General Hospital Bandung

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Abstract

Background: Nasal foreign bodies are caused by the insertion of an extraneous substance into the nasal cavity. These cases frequently occur in children. Nasal foreign bodies are easily diagnosed, yet the treatment may be burdensome with possible complications and costly management. The study aimed to evaluate the characteristics of nasal foreign body cases.

Methods: The study was descriptive and cross-sectional, using secondary data taken from all medical records of the Emergency Room in Dr. Hasan Sadikin General Hospital, Bandung, from 2018 to 2021. Data were presented in tables.

Results: Of the 57 cases, most of the patients (64.9%) were aged 3-5 years, with boys as the most prevalent cases (59.7%) and the most common complaint was pain (31.7%). Inorganic foreign bodies (61.4%) were more commonly found, and being frequently found in the right nasal cavity (49.1%). The duration of the foreign body in the nasal cavity and the treatment conducted on the patients were mostly not written in the medical records, however, no complications were found.

Conclusions: A higher incidence of nasal foreign bodies can be found in boys aged 3-5 years. Inorganic objects and pain are the most common manifestations, although the condition of all patients has been improved. Raising awareness about foreign body cases to the community, especially the parents, is the key to preventing these cases from occurring.

Keywords: Characteristics, foreign bodies, nasal

Introduction

Corpus alienum or foreign body is defined as an object originating from outside body, which enters and settles inside the body. Nasal foreign body refers to a foreign body located inside the nasal cavity. It can happen through a couple of mechanisms. These foreign bodies can enter through the natural body orifice (nares or choanae), then through the wound in the facial area. Another mechanism is that a foreign body can also be caused by an undesirable error during a medical examination or treatment.^{1,2}

Foreign body cases comprise 30% of ear, nose, and throat (ENT) emergencies incidents, of which 19% of cases are nasal foreign bodies.³ Generally, nasal foreign bodies are more common in children under five years (84%), of which 73% of cases occur in children under three years.⁴ Nasal foreign bodies can

be categorized as an ENT emergency. Not only are these cases common in toddlers, but the complications can be life threatening if not treated immediately and properly. Nasal foreign bodies complications are determined by two main factors, namely the duration of the foreign body is in the nasal cavity and the characteristics of the object. The most common complications that can occur are epistaxis, mucosa ulceration, and rhinosinusitis.⁵ Some severe complications that could occur are septum perforation, especially in the case of watch batteries and aspiration of foreign bodies that may obstruct the airway, which can lead to death from suffocation.^{2,3,6,7}

Given the magnitude of the incidents and the severity of the morbidity that can occur if cases of nasal foreign bodies are not handled immediately and properly, this study was conducted to evaluate the characteristics of

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nasal foreign body cases in Dr. Hasan Sadikin General Hospital Bandung.

Methods

This study design was descriptive and cross-sectional. The population of this study were ENT patients who sought the treatment at the Emergency Room in Dr. Hasan Sadikin General Hospital Bandung. The inclusion criteria for this study were patients with a diagnosis of nasal foreign bodies who were observed from medical records from July 2018 to December 2021. Exclusion criteria were medical records that were inaccessible and unreadable. Data were collected using the total sampling method, including the characteristics of nasal foreign body cases, such as age of the patients, gender, clinical manifestations, characteristics of the foreign bodies, treatment, and outcome of the cases. The collected samples were presented in the form of table.

This study was approved by the Research Ethics Committee of Universitas Padjadjaran with ethical clearance number 940/UN6.KEP/EC/2021.

Results

In total, there were 63 cases, however, only 57 data were available. As shown in Table 1, the age of patients who sought treatment in the Emergency Room ranged from 2 to 65 years old, with preschool age (3 to 5 years old) predominant (mean age 5 years old). The male was slightly higher in proportion than female patients. Among the patients, there was an interesting case namely a suspected mental retardation case (11 years old).

The pain was the most common clinical manifestation, which was graded from pain

numerical rating scales (Table 2). Inorganic foreign bodies were found, to be more prevalent compared to organic foreign bodies. However, some types were not written in the medical records. The duration of the foreign body in the nasal cavity were also unknown. In known cases, most foreign bodies were diagnosed and treated promptly. However, there were few cases of foreign bodies that had stayed longer in nasal cavities, for example, about a week. In other cases (n=2), foreign bodies were left untreated for nine to twelve months. The treatment type conducted were mostly unknown, however, suctioning was mentioned in the medical record. All patients' condition improved, and no complication was observed after the treatment. Most foreign bodies were found in the right nasal cavity and no bilateral cases were found.

Discussion

Most of the patients found in this study were between three to five years old. These findings are consistent with many previous studies about the age of patients with nasal foreign bodies. A study in Turkey has found that the age found is four years old, with the highest cases (36.1%) occurring in children aged two to five years,⁶ whereas another study found a similar result, which is the three years age group (48.8%).⁸ These findings correspond with a study about motoric development, in which children in this age group (3 to 5 years old) begin to explore their control and power over their surroundings and also their bodies. They can actively grasp any items while playing and have a particular interest in inserting them into their body cavities, including the nares.⁸⁻¹⁰

Male patients are usually more commonly found than female patients. A study in Nigeria

Table 1 Characteristic of Patients with Nasal Foreign Body (n=57)

Variable	n	%
Age (years)	9	15.8
< 3	37	64.9
3-5	9	15.8
6-12	1	1.75
12-18	-	-
19-40	-	-
40-60	1	1.75
>60		
Gender	34	59.6
Male	23	40.4
Female		

Table 2 Clinical Manifestation and Other Factors about Foreign Bodies in Patients with Nasal Foreign Body (n=57)

	n	%
Clinical Manifestation (n=41)		
Foul-smelling	2	4.9
Epistaxis	2	4.9
Nasal discharge	8	19.5
Hyperemic mucosa	3	7.3
Edema	4	9.8
Unilateral pain	13	31.7
Asymptomatic	9	21.9
Type of Foreign Bodies (n=57)		
Organic	7	12.3
Inorganic	35	61.4
Unknown	15	26.3
Duration of Foreign Bodies in Nasal Cavity (n=57)		
<24 hours	13	22.8
1-7 days	1	1.8
8-30 days	0	0
>30 days	2	3.5
Not written in the medical records	41	71.9
Treatment (n=57)		
Tweezers or forceps	0	0
Medical instrument with a hook	0	0
Catheter	0	0
Suction	3	5.3
Not written in the medical records	54	94.7
Outcome (n=57)		
Improvement	57	100
Complication	0	0
Nasal Cavity (n=57)		
Right	28	49.1
Left	17	29.8
Bilateral	0	0
Not written in the medical records	12	21.1

has shown that male patients are slightly more prevalent (50.6%).^{2,6} These findings are explained by a study that compared motoric activity between genders. Most of the male respondents were more active in grasping, playing, and manipulating toys or items around them, compared to female respondents.¹¹

This study shows that the prevailing clinical manifestation is pain, followed by asymptomatic, nasal discharge, edema, hyperemic mucosa, foul smelling, and epistaxis, sequentially. A previous study has found that the most prevalent clinical manifestations found are asymptomatic or foul-smelling nasal discharge, followed by nasal discharge. In contrast, other symptoms like bleeding and nasal discomfort are the least common.⁸ Purulent rhinorrhea with foul smell and

bleeding are also common.¹² Several factors might be the causes of clinical manifestation.

Most of the patients were under or equal to 5 years of age, and they were easily irritated, especially in a foreign and hustling setting such as the Emergency Room, being surrounded by strangers examining them.¹³ The doctor might misinterpret this and conclude that the patient is in pain. These might be the reason why pain became the most common clinical manifestation found in this study. In addition, pain can be marked on a numerical rating scale of pain.

Inorganic and organic foreign bodies have been found in this study; inorganic objects such as small toys, beads, button batteries, and Styrofoam, whereas organic substances such as rice, seed, bean, and paper. The previous

study found that foreign bodies extracted were also comprised of both inorganic and organic objects. Inorganic objects, such as beads, stones, toys, erasers, and others, were found in 74% of cases, while organic objects were found in 25% of cases.² These findings were in accordance with another study conducted in Turkey, that inorganic were more commonly found.¹⁴ Availability of the objects may be the reason why inorganic matter was more commonly found.¹⁵ As toddlers begin to explore their surroundings, they start to grasp easily accessible items around them, such as small toys, beads, button battery, and others, which they have a particular interest in putting such objects in their nose or mouth.^{11,16,17}

The duration of the foreign body in each patient mostly was not written in the medical records. From the cases known for their duration, most of the patients were diagnosed and treated in less than twenty-four hours. These results are slightly different from data obtained in Malaysia, most of the patients did not seek medical help within 24 hours after the entrance of the foreign body, yet the majority of the cases received medical attention within the first week.⁸

After the treatment, no complication was found in this study, and patients' conditions were improved after treatment. A previous study has found that hook, forceps, and suctioning predominantly treated cases. Few complications (7%) were found, such as rhinosinusitis, epistaxis, laceration, rhinolith formation, and ulceration of nasal septum.³ Another study has shown that foreign bodies were extracted using micro-instruments such as forceps or micro-hook. The outcome was mostly favorable, with only slight epistaxis and septal perforation.¹² The outcome of these cases is not fully determined by the method of extraction.

More than 20 foreign body treatments are defined in many kinds of literature, yet the outcome may vary, influenced by many other factors such as patients' age, compliance, duration of the foreign body in the nasal cavity, and even physician's skillfulness.^{14,18}

Foreign bodies were more commonly found in right nasal cavity than the left nasal cavity, however, left or bilateral cavities may exist.³ Interestingly, infants began to develop a preference for using one particular hand in the first two years of life.¹⁹ This unilateral handedness would influence how children interact with their environment, especially in exploring, grasping, and playing with objects around them. Many studies found that right-

handedness predominates in infants, even similarly to adults across the globe. This might be why foreign bodies were more commonly found in the right nasal cavity.^{16,20}

This study has several limitations. The lack of completeness of medical records makes the availability of data less and less. In addition, most medical records were handwritten, and many were difficult to read. There are also quite a lot of incomplete medical records, resulting some variables could not be measured precisely, such as treatment and duration of the foreign body in the nasal cavity. In the era of digital platforms in the hospitals, data acquisition would be better for exploring important and interesting cases.

In conclusion, nasal foreign body cases are predominantly prevalent in young age, with the majority between 3 to 5 years old and male. Clinical manifestations are generally mild, with pain being the most common complaint. The foreign bodies are mostly inorganic material. The outcomes are favorable, and no complications are found after the treatment. Raising awareness about foreign body cases to the community, especially parents of young children, is the main key in preventing and treating these cases.

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