

## A Clinical Study on Management and Complication of Foreign Body Nose in Patients Attending a Tertiary Care Hospital of Jharkhand.

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### Abstract:

**Introduction:** Foreign bodies in the nasal cavity are commonly encountered in emergency departments, more frequently seen in the pediatric age group, they can also affects adults, especially with mental retardation or psychiatric illness, children interests in exploring their bodies make them more prone to lodging foreign bodies in their nasal cavities.<sup>(1)</sup> **Objectives:** 1) To describe the socio - demographic profile of patients with foreign body nose & to study different types of foreign body nose in Rajendra Institute of Medical Sciences (RIMS), Ranchi during Jan 2016- December 2017 . 2) To study their major presenting complaints. 3) To categorize the patients on the basis of mode of management and its complications. **Design of study:** Record based study. **Materials and methods:** Data for study was collected from RIMS Minor- OT register during the period of Jan 2016- December 2017 (24 months). Total number of patients studied during this period - 150. **Statistical analysis:** Templates were generated in MS excel sheet and data analysis was done using SPSS software (version 20). **Result:** Study showed foreign body nose was more common in children in 3 – 6 years age group (54%). Majority (94%) patients presented with non-living objects in the nasal cavity, including organic (52%) and inorganic (42%). Foreign body seen in nasal cavity (82.67%) was the most common presenting complaint. Most of the patients (88.67%) were managed in emergency with removal of foreign body. **Conclusion:** Foreign body in the nasal cavity is slightly more common in males (M:F= 1.2:1), mostly in age group (3 - 6 years). More than 4/5<sup>th</sup> (82.67%) of patients present with foreign body nose, followed by foul smelling nasal discharge in about 1/3<sup>rd</sup> (30.67) patients. Epistaxis (8%) being the most common complication.

**Keywords:** Foreign body, Management, Maggots, Nasal cavity, Anterior Rhinoscopy .

Date of Submission: 12-07-2018

Date of acceptance: 27-07-2018

### I. Introduction

The removal of foreign bodies in children is very common in the otolaryngologists daily routine.<sup>(2)</sup> Children aged 2–4 years present more commonly with nasal foreign bodies, likely because at this age they are more ambulatory and come in contact with more objects which may be accommodated by the nasal cavity.<sup>(3-7)</sup> The reasons for the insertion of foreign bodies include curiosity, boredom, imitation, irritation, rhinitis, otalgia, fun making, and the wish to explore the orifices of the body.<sup>(8)</sup>

The presence of the foreign body disrupts mucociliary dynamics, resulting in the foul smelling, unilateral, mucopurulent rhinorrhea. Children with unilateral rhinorrhea should always be suspected as having a nasal foreign body until proven otherwise. Unilateral foul-smelling nasal discharge is the hallmark of a nasal foreign body, but this symptom profile may not manifest at the initial presentation, taking some time to develop.<sup>(9)</sup>

Nasal foreign bodies tend to be located on the floor of the nasal passage, just below the inferior turbinate, or in the upper nasal fossa anterior to the middle turbinate.<sup>(10)</sup>

Anterior rhinoscopy is of utmost importance in the identification of a nasal foreign body. This is sometimes more challenging in the presence of thick secretions. Clearance of these secretions and direct visualization may elucidate the manner in which the object became lodged in the nares. Mucosal swelling is often present and may be improved with topical decongestants such as oxymetazoline. Topical anesthetics such as lidocaine may also be applied endonasally, improving patient comfort with the examination. Suctioning of secretions is often necessary.

Successful removal of nasal foreign bodies requires adequate preparation. The first attempt at foreign body removal is usually the easiest as patient cooperation deteriorates with subsequent attempts. There are many methods to remove nasal foreign bodies and the one which is employed should effectively remove the object in the safest and least traumatic fashion possible. Techniques commonly used are removal of foreign body by jobson horne probe, tilley's/ hartman's forceps, foreign body hook, diagnostic nasal endoscopy & subsequent removal, turpentine nasal douching & removal of maggots.

The risk of complications is associated with many factors including the length of time that the foreign body has been in the nose and the size, and shape, and other characteristics of the foreign body. The amount of local nasal mucosal inflammation and nasal discharge is likely to be greatest with an organic foreign body and with increasing length of time. Disk batteries represent a uniquely dangerous type of foreign body and manifest a more rapid and serious inflammatory response with detrimental effects to the local tissues. Nasal synechiae may also develop after the presence of a nasal foreign body. Resultant sinus outflow obstruction may ensue leading to chronic rhinosinusitis.

Another rare but serious complication with nasal foreign bodies is aspiration.<sup>(11)</sup> Large foreign bodies in the nasopharynx and small foreign bodies situated in the anterior nasal cavity pose the greatest risk for aspiration especially during attempts at removal with the patient agitated.

The present study reports socio-demographic, clinical and management aspects of nasal foreign bodies in 150 patients presenting to our centre.

## II. Materials And Methods

This record based study included 150 cases presenting in ENT emergency, RIMS, Ranchi with foreign body nose /clinical suspicion of foreign body in the nasal cavity during the period of 24 months (Jan 2016 – December 2017). All the patients were evaluated carefully with thorough history and nasal examination. Nasal Endoscopy was done wherever necessary. Radiological investigation like X- ray was done when the foreign body was not visible. This was followed by removal of foreign body & management of complications. Templates were generated in MS excel sheet and data were analysed using SSPS software (version 20).

## III. Results

Table 1. shows socio- demographic profile of patients with foreign body in the nasal cavity. During Jan 2016-December 2017, out of 150 patients with foreign body nose, most patients were children in the age group 3-6 years 54%(n=81), followed by 6-9 years age group 30%(n=45), males 54%(n=81) and rural 54.67%(n=82). 6% (n=9) patients are more than 10 years of age.

**Table 1: Socio-demographic profile of the patients :-**

SOCIO-DEMOGRAPHIC PROFILE	GROUPS	FREQUENCY(n=150)	PERCENTAGE %
AGE (YEARS)	0 – 3	15	10
	3 – 6	81	54
	6 – 9	45	30
	> 10	9	6
	<b>TOTAL</b>	<b>150</b>	<b>100</b>
GENDER	MALE	81	54
	FEMALE	69	46
	<b>TOTAL</b>	<b>150</b>	<b>100</b>
RESIDENCE	URBAN	68	45.33
	RURAL	82	54.67
	<b>TOTAL</b>	<b>150</b>	<b>100</b>

52%(n=78) presented with organic foreign body, such as ground nut 12.67%(n=19), Bengal gram 8%(n=12), tamarind seed 6%(n=9), thermocol ball 6.67% (n=10) and 42%(n=63) presented with non-organic foreign body, such as chalk piece 11.33%(n=17), eraser 6%(n=9), crayon 5.33%(n=8), whereas 6% (n=9) presented with living foreign body( maggots) (Table 2).

**Table 2. Categorization of patients on the basis of types of foreign body in nose :-**

TYPES OF FOREIGN BODY IN NOSE	FREQUENCY(n=150)	PERCENTAGE %
LIVING	MAGGOTS	9 6
NON – LIVING	<b>1). ORGANIC :-</b>	<b>(78)</b> <b>(52)</b>
	GROUND NUT	19 12.67
	TAMARIND SEED	9 6
	BENGAL GRAM	12 8
	JOWAR SEED (MAIZE)	6 4

	WATER MELON SEED	4	2.67
	GREEN PEA	5	3.33
	COTTON	4	2.67
	THERMOCOL BALL	10	6.67
	PAPER	6	4
	OTHERS	3	2
	<b>2). INORGANIC :-</b>	<b>(63)</b>	<b>(42)</b>
	CHALK PIECE	17	11.33
	PLASTIC BEADS	5	3.33
	ERASER	9	6
	BUTTON	7	4.67
	STONE	6	4
	BALL BEARING	4	2.67
	CRAYON	8	5.33
	BATTERY	4	2.67
	OTHERS	3	2
	<b>TOTAL</b>	<b>150</b>	<b>100</b>

More than 4/5<sup>th</sup> (82.67% ) of patients presented with foreign body nose, followed by foul smelling nasal discharge in about 1/3<sup>rd</sup> (30.67) patients , epistaxis in 14.67% (n=22) , maggots seen in the nasal cavity in 4% (n=6) (Table3).

**Table. 3 Categorization of patients on the basis of presenting complaints :-**

PRESENTING COMPLAINTS	FREQUENCY	PERCENTAGE
FOREIGN BODY IN THE NASAL CAVITY	124	82.67
FOUL SMELLING NASAL DISCHARGE	46	30.67
EPISTAXIS	22	14.67
MAGGOTS IN THE NASAL CAVITY	6	4

Most of patients (88.67%) were managed in emergency with removal of foreign body by different methods such as using jobson horne probe 56.67% (n=85), tilley/ hartman forceps 22.67% (n=34) and foreign body hook 9.33% (n=14). Diagnostic nasal endoscopy & subsequent removal of foreign body done in 5.33% (n=8) in clinically suspected patients. Turpentine oil douching & removal of maggots done in 6% (n=9) patients. (Table 4).

**Table. 4 Categorization of patients on the basis of mode of management done:-**

MODE OF MANAGEMENT	FREQUENCY (n=150)	PERCENTAGE %
JOBSON HORNE PROBE	85	56.67
TILLEY / HARTMAN FORCEPS	34	22.67
FOREIGN BODY HOOK	14	9.33
DIAGNOSTIC NASAL ENDOSCOPY & REMOVAL	8	5.33
TURPENTINE OIL DOUCHING & REMOVAL	9	6
<b>TOTAL</b>	<b>150</b>	<b>100</b>

About 1/4<sup>th</sup> , 24.67% (n=37) had some complications. Epistaxis 8% (n=12) being the most common complication, followed by mucosal tears 6% (n=9), vestibulitis 3.33% (n=5), rhinosinusitis 2.67% (n=4), rhinolith 2.67% (n=4) & septal perforation 2% (n=3).

**Table 5. Complications of foreign body nose :-**

CRITERIA	FREQUENCY (n=150)	PERCENTAGE %
WITHOUT COMPLICATIONS	113	75.33
WITH COMPLICATIONS		
EPISTAXIS	12	8
MUCOSAL TEAR	9	6
VESTIBULITIS	5	3.33
RHINOSINUSITIS	4	2.67
RHINOLITH	4	2.67
SEPTAL PERFORATION	3	2
<b>TOTAL</b>	<b>150</b>	<b>100</b>

#### IV. Discussion

In our study, most patients are children in the age group 3-6 years 54% (n=81), followed by 6-9 years age group 30% (n=45). Age is most commonly around 3 years in most studies; Kharoubi reported a mean age of 4.3 years.<sup>12</sup> In the literature, according to Figueiredo RR et al, most nasal foreign bodies were non-organic

compounds (NOC), which accounted for 72–80% of extracted objects,<sup>12, 13</sup> which is in contrast to our study which showed non-organic 42% (n=63) & organic 52% (n=78) foreign body. More than 4/5<sup>th</sup> (82.67%) of patients presented with foreign body nose, diagnostic nasal endoscopy & radiological investigation like X ray was very helpful when the foreign body was not visible on anterior rhinoscopy. Accurate diagnosis often relies on adequate visualization and the proper use of specialty equipment in the otolaryngologist's armamentarium. One must exercise caution when dealing with these foreign bodies and utilize the operating suite when appropriate. About ¼<sup>th</sup> (24.67%) of patients had some complications owing either to manipulations at home or by local untrained doctors. For children who have successful removal of nasal foreign body and do not have septal perforation or signs of a secondary bacterial infection, routine treatment with prophylactic antibiotics is not recommended.<sup>14</sup>

## V. Conclusion

In our study, most of the patients are below 10 years of age presenting either with presence of foreign body in the nose or foul smelling nasal discharge. In general, the clinician has to make a clinical judgement as to what is going to be the best method for removal of a foreign body, bearing in mind that a child is unlikely to tolerate repeated manipulation and the doctor will only have one attempt at using a method that is going to cause any pain whatsoever. Techniques employed should consider the character and position of the foreign body and make use of these factors to aid in the delivery of the foreign object.

## Acknowledgements

We are thankful to our faculty members for their proper guidance and the staffs of ENT department, RIMS, Ranchi for their support and help.

### FINANCIAL SUPPORT AND SPONSORSHIP

Nil.

### CONFLICTS OF INTEREST

There are no conflicts of interests.

### ETHICAL APPROVAL

The study was approved by Institutional Ethics Committee.

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Dr. Nishant Kumar "A Clinical Study On Management And Complication Of Foreign Body Nose In Patients Attending A Tertiary Care Hospital Of Jharkhand.."IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 7, 2018, pp 28-31.