



ANALYSIS OF ENIGMA OF NASOPHARYNGEAL FOREIGN BODY EMERGENCY AND ITS MANAGEMENT - A RETROSPECTIVE STUDY

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ABSTRACT

Mechanism of entry of foreign body into nasopharynx can sometimes be confusing and is easily overlooked in the routine foreign body workup and acts as a hidden area for vanishing foreign bodies. Authors emphasize the importance of parental education and awareness to avoid digital manipulation/extraction of ingested foreign bodies.

KEYWORDS

Aerodigestive Foreign Body, Diagnostic Nasal Endoscopy(DNE), Pediatric Airway Emergency, Nasopharynx, Bronchoscopy

INTRODUCTION

The aerodigestive foreign body is a common phenomenon in children. The most common foreign bodies encountered in ENT practice are coin, battery, chicken/fishbone, peanut, paper, etc, and are most commonly seen in children less than 5 years of age on account of their curious nature and immature dentition and insufficient coordination of swallowing mechanism¹. Airway foreign bodies are treacherous as they can cause sudden respiratory obstruction^{1,2}. Most of the inhaled or ingested foreign bodies either pass into the trachea or oesophagus and entrapment of the foreign body in the nasopharynx is a rare entity^{2,3}. The foreign body can reach the nasopharynx either through the nose or through the oropharynx³. In this article, we present a set of 4 different foreign bodies impacted in the nasopharynx with varying clinical

presentations and surgical implications with a focus on the prevention and management perspectives in such rare scenarios.

MATERIALS AND METHODS

A retrospective analysis of data of 4 patients managed for nasopharyngeal foreign body in a tertiary care hospital for one year period was included in the study. The data of clinical presentation, type, duration of foreign body, investigations, treatment, and complications were collected and analysed as shown in **TABLE 1**.

RESULTS

Table 1:

Case no.	Age /sex	Symptoms	Duration	Foreign body	Investigations	Treatment	Complications
1.	1yr 6months/M	-Purulent nasal discharge -Bleeding on & off -snoring & mouth breathing	1 month	Button battery	Xray -PNS Xray -nasopharynx	Nasal endoscopy followed by foreign body removal under General Anaesthesia	Bleeding – controlled by xylometazoline nasal drops
2.	2 year/ M	Foreign body – coin ingestion	7 days	Coin	Xray – nasopharynx	Foreign body coin removal under General anaesthesia	None
3.	3 year/M	Purulent, foul smelling nasal discharge Right side nasal cavity	2months	Paper	Xray – PNS Xray – Nasopharynx	Nasal endoscopy followed by foreign body	None
4.	1 year/F	Foreign body entrapped in nasopharynx while retrieval from Right main bronchus during flexible fiber optic bronchoscopy	30 minutes	Piece of Areca Nut	None	Foreign body removal by Nasal Endoscopy	Minor bleeding controlled by local xylometazoline nasal drops

DISCUSSION

Foreign body in the aerodigestive tract of a child is a day-to-day emergency faced by an Otorhinolaryngologist and it is not uncommon to find these foreign bodies pass either into the trachea or the oesophagus^{1,2}. Entrapment of foreign body in the nasopharynx is scarcely reported and is a rare presentation². The nasopharynx is like the vault of the human pharynx and most foreign bodies reaching this area descend into the oropharynx³. In exceptional situations, foreign bodies can penetrate into adenoid tissue & nasopharyngeal walls and can potentially act as the latent site for missed foreign bodies in children. This region is usually neglected in searching for missing foreign bodies in the upper aerodigestive tract, as the main concentration of the doctor will be inclined towards oropharynx, hypopharynx, trachea, and oesophagus. Many a times, parents are advised that it must have passed through oesophagus especially when it is a radiolucent foreign body. Hence, the foreign bodies in the nasopharynx tend to be easily missed as in this 2-year-old child(Case 1) who was referred from the paediatric department. The child had a history of coin ingestion 7 days back, following which he was treated in a private clinic. X-ray chest and abdomen were done, with no sign of foreign body on x-ray. After which the child was managed conservatively. The child presented to us with a history of coin ingestion, nasal obstruction, and mouth breathing, and repeat X-rays were ordered showing radiopaque shadow in the nasopharynx(Figure

1). Therefore, it is pertinent to note that we should always have a high degree of suspicion in cases of vanishing foreign bodies in an aerodigestive tract and should not hesitate from ordering an X-ray nasopharynx and nasal endoscopy in such cases⁴.



Figure 1: Xray Neck lateral view showing Coin extending to the Nasopharynx from Oropharynx

Nasopharyngeal foreign bodies may remain asymptomatic for weeks or present with symptoms mimicking adenoid hypertrophy and chronic rhinosinusitis leading to delays in diagnosis and probable complications⁵. In our study foreign body battery and paper(Case 2 & 3) presented with non-specific symptoms of nasal blockage, discharge

only to be discovered accidentally on X-ray and nasal endoscopy respectively (Figure 2,3). Thus, we have to be vigilant in dealing with children who present with a history of prolonged nasal discharge and blockage and proper history taking in such cases is of paramount importance.



Figure 2: Xray Neck Lateral view revealing Battery in the Nasopharynx



Figure 3: DNE revealing paper piece in the Choana and Nasopharynx.

The mode of entry of the foreign body in the nasopharynx is either through the nose or through the oropharynx⁵. But both are potentially rare as the vestibulum nasi is narrower than the nasopharynx and the ascend of foreign objects from the oral cavity to the nasopharynx anti-gravity via the isthmus of the oropharynx is also a difficult occurrence⁶. The probable mechanism for entry of foreign body in the nasopharynx is manipulation, regurgitation brought about by vomiting and coughing, and ingestion in a supine or cervically extended position^{5,6}. In our study, the proposed mechanism for entry of foreign body in the nasopharynx is through the nose in case 1 and 3 and through the oropharynx in case 2. It is prudent to note that parental education about restraining from digital manipulation and manual extraction in cases of a foreign body is important to prevent dislodgement and trauma.

X-ray, although an age-old investigation, has stood the test of times and has proven to be of critical role in diagnosing the radiopaque foreign bodies like the coin, battery, and metallic objects. We diagnosed the foreign body coin and battery using X-ray nasopharynx⁷. The dilemma comes into the scenario when the foreign body is radiolucent – plastic or vegetative foreign bodies for which nasal endoscopy has emerged as the gold standard investigation. Foreign body paper was accidentally discovered while performing nasal endoscopy for a patient with suspected adenoid hypertrophy⁶.

The dictum of management is clear, the aerodigestive foreign body is a surgical emergency and should be removed as soon as possible and in cases of missing foreign bodies, the hunt should be towards the Nasopharynx^{5,6}. The same was followed in our cases, foreign body battery and paper were removed by nasal endoscopy and forceps under general anaesthesia⁷. There were no untoward complications except for minor mucosal bleeding in the battery due to its property to cause erosion of tissue. The foreign body coin removal was executed under general anaesthesia. The patient was positioned in Rose position and Boyle Davis's mouth gag was inserted and laryngeal packing was done. The head end was lowered to prevent the foreign body from slipping down to the airway. The suction catheter was passed from nose to oropharynx and the soft palate was retracted, nasopharynx was palpated for coin and removed with curved artery forceps.

We would like to give a passing mention to one interesting case scenario in which an urgent ENT call was sent from the pediatric bronchoscopy clinic for a foreign body (areca nut piece) with broken

Dormia basket wire that is being lodged in the nasopharynx with adenoid hypertrophy while retrieving it from right main bronchus during flexible fiberoptic bronchoscopy. The pediatrician withheld the procedure and wanted an ENT opinion. Diagnostic Nasal Endoscopy was done and findings confirmed. While retrieving the foreign body, it was found that the Dormia basket along with the foreign body was stuck and the trial of retrieving the foreign body with a rigid 0 degree pediatric endoscope was carried out with the application of Lignocaine jelly. Simultaneously Operation Theatre was prepared for emergency Adenoidectomy and Foreign body removal but the foreign body along with the broken wire of the Dormia basket was successfully removed with forceps with only minor bleeding. If the foreign body in the nasopharynx was missed, it could become a latent source of infection on later dates and can present as adenoid hypertrophy. This could lead to unnecessary surgical procedure (adenoidectomy) to the patient.

CONCLUSION:

Our case study merits the mention as-

1. Nasopharyngeal foreign bodies are rare with few reports in the literature.
2. The nasopharyngeal area is easily overlooked in the routine foreign body workup and acts as a hidden area for vanishing/missed foreign bodies.
3. The nasopharynx is difficult to examine and not accessible to naked eye examination hence making X-ray nasopharynx and nasal endoscopy important investigations in suspicious cases.
4. Although in the mentioned cases there were no major complications, nasopharyngeal foreign bodies are potentially life-threatening as they can get dislodged and cause sudden respiratory obstruction.
5. Parental education and awareness to avoid digital manipulation/extraction of ingested foreign bodies.
6. The toys, remotes, etc should come with a warning about the harmful effects of button battery and appropriate parental discretion.

REFERENCES:

1. Digoy GP. Diagnosis and management of upper aerodigestive tract foreign bodies. *Otolaryngol. Clin. North Am.* 2008 Jun 1;41:485-96.
2. Kumar S, Singh DB, Singh AB. An unusual nasopharyngeal foreign body with unusual presentation as nasal regurgitation and change in voice. *Case Reports.* 2013 Jul 24;2013:bcr2013010005.
3. Mori T, Inoue N. Nasopharyngeal foreign body triggered by a blind finger sweep. *Case Reports.* 2016 Aug 26;2016:bcr2016216536.
4. Otolaryngol GJ. Foreign Body (Coin) in the Nasopharynx of a child and its Management. *Indian J Otolaryngol.*;63(3):285-6.
5. Alshehri WM, Al-Qahtani B. A Rare Incidental Finding of a Foreign Body in the Nasopharynx during Adenotonsillectomy. *Case reports in otolaryngology.* 2018 Mar 28;2018.
6. Jotdar A, Dutta M, Kundu S. Nasopharynx-the secret vault for lost foreign bodies of the upper aerodigestive tract. *Iran J Otorhinolaryngo.* 2016 Nov;28:431.
7. Kwatra D, Kumar S. Battery stuck in adenoid tissue: A rare case of nasopharyngeal foreign body. *Visual Journal of Emergency Medicine.* 2020 Jul 1;20:100801.