

## Unusual nasopharyngeal foreign body in a four-year-old child

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### Abstract

Foreign bodies are amongst the commonest emergencies presenting to the otorhinolaryngologists. They can be remarkably difficult to see and remove. However, nasopharyngeal foreign bodies are exceedingly rare. Foreign bodies can have disastrous complications, such as rhinolith formation, septal perforation, erosion into the surrounding structures, and infections including sinusitis, otitis media, periorbital cellulitis, diphtheria, meningitis, and tetanus. Imaging investigations, such as X-ray, CT scan and MRI, can be of great help in diagnosing and planning treatment in clinically equivocal cases, although they are rarely needed. Complete removal of the foreign body is of paramount importance in treating this entity.

This unique case demonstrates the importance of a thorough clinical examination and history in patients presenting with vague complaints, especially in the paediatric population due to their usually non-specific symptoms and insufficient history.

**Keywords:** Foreign body, emergency, impaction.

**DOI:** 10.47391/JPMA.5676

**Submission completion date:** 12-01-2022

**Acceptance date:** 08-12-2022

### Introduction

Accidentally inserted foreign bodies in children are a common problem encountered by otorhinolaryngologists, due to the developmentally inquisitive nature of this population.<sup>1</sup> Their impaction in the nasopharynx is very rare, and notably difficult to visualise.<sup>2</sup> It is most common in the preschool age, ranging from 2-5 years, or those with intellectual disability.<sup>3</sup> In a series of more than 1,000 cases, two healthcare professionals found only two cases of nasopharyngeal foreign bodies.<sup>4</sup>

The usual sites where a foreign body can be lodged in the aerodigestive tract are diverse—from most to least

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common being right bronchus (60%), left bronchus (23%), trachea (13%), and larynx (3%), whereas a nasopharyngeal foreign body is exceedingly rare, hardly receiving a mention in literature. Among unusual foreign bodies in the nasopharynx reported in the literature are a metal rod,<sup>5</sup> a fish,<sup>5</sup> an earplug,<sup>6</sup> coin,<sup>7</sup> a tooth brush,<sup>8</sup> a leech,<sup>9</sup> a sponge,<sup>10</sup> a bottle cap,<sup>11</sup> and a throat pack.<sup>12</sup>

If a foreign body impacts the nasopharynx, it may penetrate the posterior pharyngeal wall and cause intracranial damage, which may result in death.<sup>13</sup> It may also lead to airway compromise following dislodgement.<sup>1</sup> The prevalence of foreign bodies in the upper aerodigestive tract is higher in boys, and more common in children as compared to adults.<sup>5</sup> At least 12,000 foreign bodies in the respiratory tract have been removed globally, with the help of bronchoscopy so far. Clinical suspicion of a foreign body usually arises through the history and symptoms; investigations such as neck and chest imaging help in confirming the diagnosis.<sup>6</sup>

We present a unique case of a nasopharyngeal foreign body with a history of one month, probably triggered by a blind sweep, with vague complaints. To the best of our knowledge this is the only case reported in literature where the presenting complaint was of whitish nasal discharge, which was sometimes fluorescent, demonstrating the importance of a thorough history and clinical examination.

### Case Report

A four-year-old male presented to the outdoor ENT Clinic in Shalamar Hospital, Lahore, with a one-month history of fever, nasal obstruction, and difficulty in sleeping due to the nasal obstruction, and whitish nasal discharge which was sometimes fluorescent in the dark. The patient's mother mentioned her suspicion of foreign body ingestion. She had not witnessed the event but stated that a fluorescent toy was missing and the child had probably ingested it.

She suspected that the child had ingested the toy and tried to do a blind finger sweep to try to retrieve it which probably lodged it into the nasopharynx, as has been reported in the literature before.<sup>7</sup>

When the child was brought to our hospital on



**Figure-1:** Postero-anterior chest X-ray and lateral soft tissue head and neck X-ray, no foreign body is appreciable

September 01, 2021, he had already been seen by other physicians, who had performed bronchoscopy and oesophagoscopy under general anaesthesia, but to no avail. He was concurrently being treated with antipyretics and antibiotics.

After taking informed consent, and obtaining a thorough history, an examination of the patient's ear, nose, and throat was performed. The difficult examination due to the child's irritability led to insignificant results, after which an X-ray was performed (Figure 1), which too did not reveal any significant findings. Counselling of the patient's parents for examination under anaesthesia was done, to which they were hesitant and came at a later date after exhausting all other options.

During examination under anaesthesia, rigid nasal endoscopy was performed, which led to the discovery of the lost foreign body (Figure 2). One corner of the pointed



**Figure-2:** A preoperative view of the foreign body being removed.

foreign body was impacted in the posterior pharyngeal wall, another was pushing the soft palate superiorly and a third point was lodged in one of the nasal choanae. These sites were encrusted and surrounded with erythema and oedema, and each of these pointed ends of the star was embedded in granulation tissue. The foreign body was retrieved with the help of tonsil-holding forceps after disengaging each of the corners carefully, avoiding further injury to the nasopharynx.

The minor adenoid hypertrophy present in the patient's nasopharynx might have also played a role in protecting the child from aspirating the toy. This adenoid hypertrophy was visible on examination but not appreciated on X-rays.

Epistaxis usually follows foreign body removal from the nasal cavity but our patient did not experience any.<sup>8</sup> The patient had an uneventful recovery with the help of antibiotics, painkillers, and antipyretics

## Discussion

Children who present with foreign bodies often do so with nonspecific signs and symptoms, sometimes even with tonsillitis<sup>2</sup> and the diagnosis may be delayed when there is no witness to the event.<sup>6</sup> Although they usually do not result in mortality unless aspirated, long-term complications may follow, such as infection<sup>5</sup> or haemorrhage.<sup>13</sup>

Such cases have also been reported in literature where adenoid hypertrophy has protected the patient from aspiration of foreign body, much similar to ours.<sup>1</sup>

This distinctive case presented to our department with ambiguous complaints of whitish nasal discharge and inability to sleep. Other children presenting with foreign bodies have also done so with vague complaints, sometimes even with tonsillitis<sup>2</sup> and the diagnosis may be delayed when there is no witness to the event.<sup>1</sup>

Fluorescent children's toys are made of plastic that contain substances which absorb light and emit it in the dark. These may be phosphorescent powder, zinc oxide, zinc sulphide, and strontium aluminate doped with europium among others.<sup>14</sup> According to the authors, these substances were the cause of the patient's fluorescent nasal discharge after being absorbed from the toy into the nasopharyngeal mucosa. No literature was found on reporting the effects of these chemical substances when absorbed by the human body; although

the optimal prognosis of our patient suggests them to be harmless in the short term.

A literature search also could not find a report on impaction of such a unique foreign body, although there have been case reports of other objects being lodged in the nasopharynx.<sup>5-12</sup>

To conclude, all clinicians need to have a high index of suspicion and a thorough examination of the body orifices should be done if the history and/or examination suggest an impacted foreign body. There also needs to be widespread awareness regarding paediatric supervision to further reduce the occurrence of accidental insertion of foreign bodies.

**Management of Foreign Bodies:** Diagnostic imaging may be recommended if the foreign body is difficult to visualise or other provisional diagnoses are being considered.<sup>8</sup> A foreign body can be removed from the nose with the help of haemostats, cupped forceps, old metallic eustachian tube catheters, among others.<sup>15</sup>

If these measures fail due to an uncooperative patient or embedding of the foreign body into the mucosa, an examination under anaesthesia can also be performed to aid removal.

Rhinolith formation, septal perforation, erosion into the surrounding structures, infection of the, directly and indirectly, involved tissues, including sinusitis, otitis media, periorbital cellulitis, diphtheria, meningitis, and tetanus are some of the complications of a foreign body retained in the pharynx, and should be appropriately dealt with.<sup>8</sup>

## Conclusion

To the best of our knowledge this is the only case reported in literature where the chief complaint was of whitish nasal discharge, which was sometimes fluorescent. To conclude, all clinicians need to have a high index of suspicion and a thorough examination of the body orifices should be done if the history and/or examination suggest a foreign body. They should be promptly removed to reduce mortality and morbidity. There also needs to be widespread awareness regarding paediatric supervision to further reduce the incidence of accidental foreign bodies insertion.

Foreign bodies can have devastating complications if they go unnoticed. Complete removal of the foreign body

while protecting the airway is the main priority in these cases.

**Consent:** The parents of the patient provided their consent to publish this case.

**Disclaimer:** None.

**Conflict of Interest:** One of the co-authors signed the ethical review statement as our departmental head. He is also a co-author of this manuscript.

**Source of Funding:** None.

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