

Unusual Foreign Bodies of the Nasal Cavity: A Series of Four Cases

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Abstract: Foreign bodies of the nose in adults are a rare entity and seldom encountered, although they are frequently encountered among children and mentally challenged patients. Here we present 4 unusual cases of foreign body nose, 3 adults and an eight year old child who all predominantly presented with nasal symptoms and finally turned out to have foreign body lodged in their nasal cavity. An ectopic tooth in the nasal cavity of first adult, two dead honey bee in the nasal cavity of second adult. Iatrogenic foreign body (a chunk of the original Merocel nasal pack) in the third adult and the eight year old child was found to harbour live leech which was eventually extracted.

Keywords: foreign bodies, nasal cavity, leech infestation, intranasal tooth.

I. Introduction

Nasal foreign bodies are commonly seen in the paediatric age group of 2-8 years and mentally retarded individuals because of curiosity and interest in exploring their bodies which make them more vulnerable to lodging foreign bodies in their nasal cavities¹. Nasal foreign bodies among adults in extremely rare and if present is without their knowledge. In adults, they are caused mostly by injury in an accident, trauma or coexisting mental disorders making it difficult to suspect foreign body in them². There have numerous literature on paediatric foreign bodies documented and most commonly encountered foreign bodies in nose include toys, sweets, jewels, rocks, batteries, magnets, etc. Both among the children and adults, inanimate foreign bodies constitute the majority when compared to live foreign bodies^{2,3,4}.

The presence of a foreign body is not usually life threatening. However, it may result in long term complications, and could even be fatal, if the object gets dislodged into the airway. The foreign bodies in nose present with a wide spectrum of symptoms and signs. In adults a high index of suspicion is needed^{2,5,6}.

Here we present 4 unusual cases of foreign body, 3 adults and an eight year old child who all predominantly presented with nasal symptoms and finally turned out to have foreign body lodged in their nasal cavity. An ectopic tooth in the nasal cavity of first adult and two dead honey bee in the nasal cavity of second adult. Iatrogenic induced foreign body in the third adult where a chunk of the original Merocel nasal pack was found and removed few weeks post endoscopic surgery. The eight year old child was found to harbour live leech which was eventually extracted. The incidence of ectopic teeth is uncommon and its incidence is 0.1 to 1% which makes it a rare entity⁷. Honey bee in nasal cavity detected three weeks after being stung is unusual with patient presenting late. On the presence of live leech in nasal cavity in the child, there have been very few reported literature which makes it very unusual.

Case 1:

An eight year old male child presented to our ENT OPD with chief complaints of intermittent unilateral epistaxis of 15 days duration from left nostril. He also complained of left sided nasal obstruction with crawling sensation inside the nasal cavity. The parents complained of live organism seen near the anterior nares of left nasal cavity on and off. There was no history of foreign body insertion, trauma, nasal discharge, fever or similar complaints of nasal bleed in the past. A provisional diagnosis of nasal myiasis was made and the patient was admitted for further management.

On examination of the nasal cavity, the child had congested middle meatus and middle turbinate of left side. No active bleeding site was found. In the area of axilla of middle turbinate on left side, dark fleshy material was seen which was moving. A front opening forceps was used to pull it out, but the fleshy material was slimy and kept slipping. A suction apparatus was used to dismantle its attachment from the lateral wall of the nose and immediately the tip of the moving slimy fleshy was held with the front opening forceps and pulled out. The fleshy material initially thought as myiasis turned out to be a live leech of nearly 6 cm long. After the removal of the leech, xylometazoline drops was instilled into the nasal cavity and the child was given tetanus toxoid injection stat. The child was put on oral 3rd generation cephalosporins antibiotic cefpodoxime and analgesics post procedure. His haematological investigations revealed his haemoglobin to be 7 gram % and total leucocyte count as 17,000/cumm. Examination of the other nasal cavity did not reveal any pathology nor did the nasopharynx. On

further probing the parents , it was found out that both the parents were coffee bean pickers on contract basis and had visited Madikeri, along with the child for coffee bean picking and all were exposed to drinking from an open pond nearby to the coffee bean picking area and took bath in the same pond. The child was kept under observation for a day. After the leech removal, there was no episode of epistaxis and the child was completely asymptomatic. The child was discharged with instruction to parents to continue oral antibiotics and haematinics for the child and revert back if similar complaints arose.

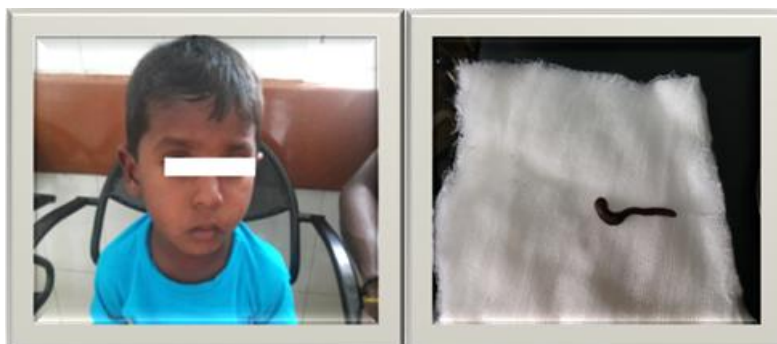


Fig 1: Child with complaint of epistaxis **Fig 2:** leech extracted from child's nasal cavity

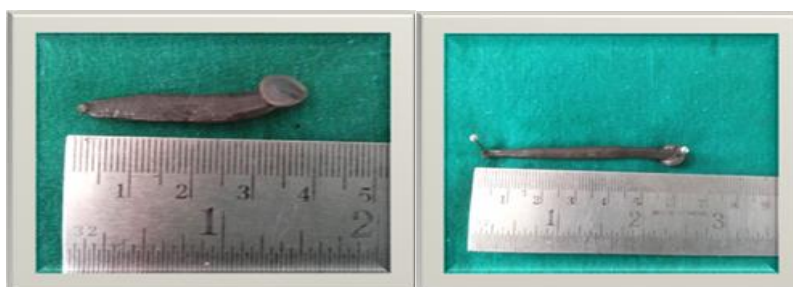


Fig 3 and fig 4: showing the length of leech extracted from child' nasal cavity

Case 2:

A 60 year old male patient presented to ENT OPD with complaints of bilateral nasal obstruction since 5 days. It was associated with nasal discharge, which varied from being mucoid to mucopurulent .The patient also complained of epiphora, more on the left side. History of occasional head ache was present in bilateral temple areas. Nasal examination revealed the patient having deviated nasal septum to right with tenacious secretions in left nasal cavity with blackish discolouration. Nasal endoscopy was done to suction out the secretions. After the suctioning, in the floor of the left nasal cavity dead insect was found which was later identified as honey bee. On asking the patient if there was a history of bee sting, he gave positive history of bee sting 3 weeks back and was treated and was normal until 10 days back when he developed the above mentioned symptoms. On complete endoscopic examination of both the nasal cavity, one more dead honey bee was found in the left nasal cavity roof area which was removed. Patient was treated for with antibiotics for sinusitis. After 2 weeks follow up patient was asymptomatic.



Fig 5: Patient with c/o nasal Obstruction **Fig 6:** nasal endoscopy picture of patient



Fig 7: Showing dead honey bee removal

fig 8: honey bee extracted from the nasal cavity

Case 3:

52 year old male patient presented with nasal obstruction and headache since 6 months. On complete history taking and physical examination he was diagnosed to have chronic sinusitis with nasal polyposis, which was confirmed on CT scanning. He underwent functional endoscopic sinus surgery for the same. Post surgery his nasal cavities were packed with Merocel nasal packs, one on each side which was eventually removed 48 hours post surgery. The patient was discharged with oral antibiotics, analgesics, saline nasal spray and was advised regular weekly follow up. The patient was irregular on follow up and returned 15 days post discharge with foul smelling discharge from left nasal cavity and persisting nasal obstruction. On nasal endoscopic examination in the left nasal cavity, a whitish soft material was seen in the left middle meatus region with copious mucopurulent secretions. The secretions were suctioned and the whitish soft material was grasped with nasal packing forceps and removed. On examination it was found to be a small Merocel piece which must have been separated or detached from the main Merocel pack during removal 48 hours post surgery and acting as a nidus of infection and causing persisting nasal obstruction and foetid discharge. Patient was asymptomatic on 4 week follow up.

Case 4:

A 46 year old lady presented with complaints of right sided nasal obstruction and fetid odour noticed since 1 year. Nasal examination revealed a whitish mass in the floor of the right nasal cavity surrounded by granulation tissue just in front and below the anterior end of right inferior turbinate.. On probing the mass was hard, tender and bled slightly from its surface. X-ray showed a tooth-like structure in the right nasal cavity. As there was no history of nasal trauma or foreign body insertion, the possibility of an ectopic tooth was considered. Under local anaesthesia, the tooth was extracted from the nasal cavity with 0 degree endoscopic guidance. Haemostasis was attained. Patient was asymptomatic on 2 weeks follow-up.

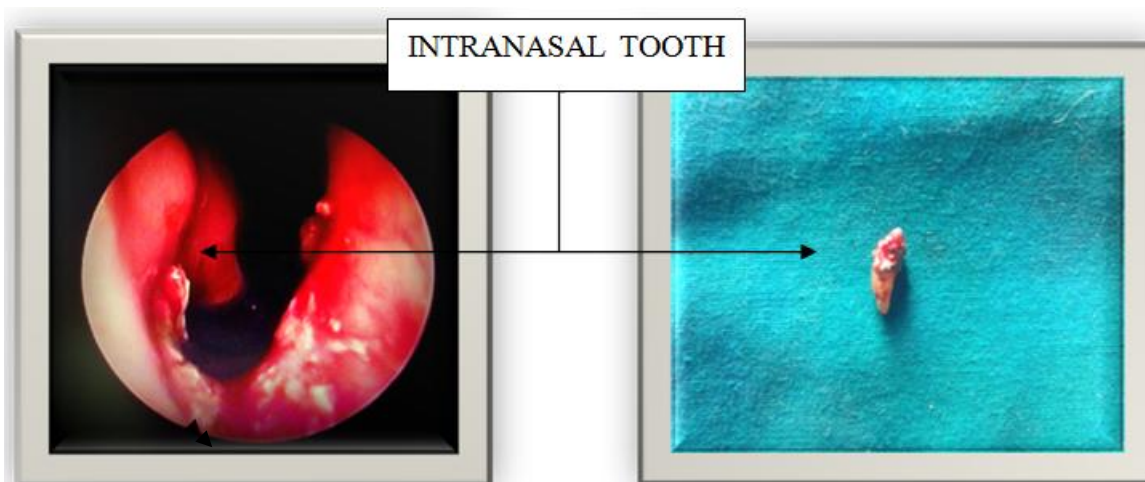


Fig 9: Endoscopy showing intranasal tooth

Fig 10: Intranasal tooth removed

II. Discussion

Nasal foreign bodies produce local inflammation which may result in pressure necrosis and damage to the nasal cavity and surrounding structures. Symptoms are mainly caused by inflammation, mucosal damage and extension into adjacent structures and could include sneezing, epistaxis, nasal obstruction, nasal discharge, pain, and eventually rhino sinusitis^{2,8}.

Some foreign bodies are inert and may remain in the nose for years without mucosal changes.

However, most inanimate foreign bodies in nose initiate congestion and swelling of the nasal mucosa, with the possibility of pressure necrosis producing ulceration, mucosal erosion, and epistaxis. The retained secretion, the decomposed foreign body, and the accompanying ulceration can result in foul fetor. These changes further impact the foreign body because of surrounding edema, granulations, and discharge^{2,8}. This must have been the scenario in our cases of ectopic tooth and in the case where chunk of the original Merocel pack was found. Our view is that a piece of the original Merocel must have been separated from the main pack either while nasal packing immediately post surgery or a piece must have been left over while the nasal pack was removed 48 hours post surgery. Either way it accounts for iatrogenic cause. In literature various iatrogenic foreign bodies have been reported to cause nucleation and deposition of calculi, including intrauterine devices, catheters, suture materials, and surgical staples^{2,9}.

Intranasal ectopic teeth are rare. Yeung and Lee reviewed the literature and found a total of 41 well-documented cases¹⁰. The age at discovery of the intranasal teeth ranged from 3 to 62 years. The etiology of intranasal teeth is controversial. Many theories have been proposed, including developmental disturbances, such as cleft palate, teeth displaced by trauma, cysts, infection, obstruction to eruption secondary to crowding of dentition, persistent deciduous teeth, or dense bone^{11,12,13}. Intranasal teeth presented a variety of symptoms and signs, including nasal pain, nasal obstruction, epistaxis, headache, nasal discharge, mild fever, crusting of the nasal mucosa, localized ulceration, external deviation of the nose, nasal septal abscess, and nasal-oral fistula. Intranasal teeth may also be asymptomatic and may be only incidentally recognized during routine clinical or radiographic examination. The diagnosis of an intranasal tooth can be made from either clinical examination or radiographic examination. Clinically an intranasal tooth presents as a white mass without covering of nasal mucosa or as protruding reddish mass, which is completely or incompletely embedded in the nasal mucosa. Intranasal tooth located in the floor or lateral wall of the nasal cavity can be surrounded by debris and granulation tissue. When intranasal masses are identified clinically, the differential diagnosis should include nasal foreign bodies, rhinoliths, bony sequestra, neoplasm, and exostoses¹¹⁻¹⁵.

In patients with animate nasal foreign bodies, the symptoms tend to be bilateral. Nasal occlusion, headaches, and sneezing with serosanguinous discharge usually are the presenting symptoms. Examination of the nasal cavity may reveal extensive destruction of the surrounding mucous membranes, bone, and cartilage and the mucosa is fragile and bleeds easily. Constant motion and masses of different worms may be observed. These worms are firmly attached and difficult to extract^{2,16,17}.

Leeches are blood-sucking hermaphroditic parasites that vary in colour and length. Leeches belong to the phylum Annelida of the class Hirudinea. They are blood sucking hermaphroditic parasites that attach themselves to vertebrate hosts, bite through the skin, and suck out a quantity of blood. When leeches feed, they secrete an anticoagulant (hirudin), which helps them obtain a full meal of blood¹⁸⁻²².

Leeches vary in shape from elongated and cylindrical to broad or ovoid. They may be black, brightly colour, or mottled; they have muscular suckers at both their anterior and posterior ends. Their length varies from 5 mm to 45 cm. Many different types of leeches occur worldwide. Common species that infest humans are *Dinobdella ferox*, *Hirudinea granulosa* and *Hirudinea viridis*. Those that attack man may be divided into two classes: land leeches and aquatic leeches. Land or terrestrial leeches commonly live in tropical rain forests, where they may be found on stones, shrubs, and leaves. Aquatic leeches have a worldwide distribution; they live exclusively in fresh water, infesting people in muddy-bottomed rivers or ponds¹⁸⁻²².

The leech as a foreign body and parasite in the human respiratory tract occurs principally in countries in the Mediterranean area, Africa and Asia. Due to the advancement of sanitation and the popularization of tap-water usage in developed countries, cases of nasal leech infestation have rarely been reported in recent years. Leech infestation usually occurs through contact with water containing leeches when people are swimming or washing their faces in rural streams. People usually suffer from symptoms several weeks later after the leech has entered their nasal cavities. The most common symptoms are recurrent epistaxis, foreign body sensation and nasal obstruction. Sometimes the patients could even find a wriggling leech outside their nostril themselves or with the assistance of a family member¹⁸⁻²².

If a foreign body in the nasal cavity is a leech, it presents an emergency that requires immediate attention, because after leeches attach themselves to a mucous membrane, they ingest blood, which weighs on average 8.9 times their weight. They may cause severe anemia, which may require a blood transfusion¹⁸⁻²².

A unilateral mucopurulent nasal discharge with foul odour is the most consistent findings in patients with a nasal foreign body. Occasionally it can be bloodstained. Any patient who presents with a unilateral nasal

discharge should raise the suspicion of a nasal foreign body and in children this must be regarded the case until proved otherwise². The physical examination of the nose involving anterior rhinoscopy and use of either a fiberoptic nasopharyngoscope or a 0 degree rigid endoscope has made it easier for the otorhinolaryngologist and will often reveal the foreign object. However on occasions mucosal edema or granulations tend to hide it. In such cases the nose should be sprayed with a vasoconstrictor agent to shrink the mucosa before reexamination. Suction apparatus also plays an important role in making the foreign body visible by removing the secretions and debris accumulated around. Many times the foreign body becomes apparent with these maneuvers. In younger or very apprehensive children it may be necessary for the search to be carried out under a general anesthetic²⁻⁵.

After successful removal of a nasal foreign body, careful examination of the involved nasal cavity as well as the other body orifices must be undertaken to exclude the presence of other Unrecognized foreign bodies. This is more important in cases of animated foreign bodies like the live leech found in our case. Particular attention must be paid to the examination of the ear and sinuses on the involved side as acute otitis media or sinusitis are commonly seen if the foreign body has been present for any length of time. Additionally, epistaxis which frequently accompanies the removal of nasal foreign bodies must be appropriately dealt with.

Foreign bodies left in the nose have been reported to cause infections, including sinusitis, otitis media, facial cellulitis, meningitis, epiglottitis, diphtheria, and tetanus. Certain foreign objects may cause erosion of adjacent structures. Any foreign body in the nose may be swallowed or aspirated and should be removed as soon as possible be it whether child or adult^{16,23,24}.

III. Conclusion

Nasal leeches should be included in the differential diagnosis of patients with nasal congestion and epistaxis, especially patients with a history of immersion in muddy bottomed rivers or ponds. Cases such as this should be considered as emergencies, and all measures should be taken to avoid epistaxis and severe anemia. Careful inspection of the nasal cavity with endoscope is necessary. An intranasal ectopic tooth is an uncommon arising in the nasal cavity. It may be confused with other nasal cavity mass. Otorhinolaryngologist should be aware of this disease entity when encountering patients presenting with a nasal obstruction and nasal mass. In adults strong suspicion is needed to make a diagnosis of foreign body. So it becomes imperative that endoscopes must be used based on availability before a plain diagnosis of sinusitis is made and patient under treated.

References

- [1]. Davies PH, Bengler JR.. Foreign bodies in the nose and ear: a review of techniques for removal in the emergency department. *J Accid. Emerg. Med* 2000;17:91-94.
- [2]. Kalan A, Tariq M. Foreign bodies in the nasal cavities: A comprehensive review of the aetiology, diagnostic pointers, and therapeutic measures. *Postgrad. Med.J* 2000;76:484-7.
- [3]. Peridis S, Athanasopoulos I, Salamoura M, Parpounas K, Koudounakis E, Economides JC. *Int J Pediatr Otorhinolaryngol* 2009;73:205-8.
- [4]. Das SK. Aetiological evaluation of foreign bodies in the ear and nose. *J Laryngol Otol* 1984;98:989-91.
- [5]. Gregori D, Salerni L, Scarinzi C et.al. Foreign bodies in the nose causing complications and requiring hospitalization in children 0-14 age: Results from the European survey of foreign bodies injuries study. *Rhinology* 2008;46:28-33.
- [6]. Kuzly FD, Korbich M. Foreign body in nasal cavity. *Oral Surg Oral Med Oral Pathol* 1982;54:254
- [7]. Thawley SE, Ferriere KA. Supernumerary nasal tooth. *Laryngoscope* 1977;87:1770-3.
- [8]. Baluyot ST. Foreign bodies in the nasal cavity. In: Paparella MM, Shumrick DA, eds. *Otolaryngology*. Philadelphia 1980: 2009-16.
- [9]. Cheng PT, Prizker KP, Richards J, Holmyard D. Fictitious calculi and human calculi with foreign nuclei. *Scanning Microsc* 1987;1:2025-32.
- [10]. K.H. Yeung, K.H. Lee. Intranasal tooth in a patient with a cleft lip and alveolus. *Cleft Palate Craniofac J* 1996;33:157-159.
- [11]. Kohli GD, Verma PL. Ectopic supernumerary tooth in the nasal cavity. *J Laryngol Otol* 1970;84:537-8.
- [12]. Lee FP. Endoscopic extraction of an intranasal tooth: a review of 13 cases, *Laryngoscope* 2001;111:1027-31.
- [13]. Carver DD, Peterson S, Owens T. Intranasal teeth: a case report. *Oral Surg. Oral Med. Oral Pathol* 1990;70:804-805.
- [14]. Nastri AL, Smith AC. The nasal tooth. Case report. *Aust Dent. J* 1996;41:176-7.
- [15]. Medeiros AS, Gomide MR, Costa B, Carrara CF, Neves LT. Prevalence of intranasal ectopic teeth in children with complete unilateral and bilateral cleft lip and palate. *Cleft Palate Craniofac. J* 2000;37:271-3.
- [16]. Werman HA. Removal of foreign bodies of the nose. *Emerg Med Clin North Am* 1987;5:253-63.
- [17]. Moriarty RA. Nasal foreign body presenting as an unusual odor. *Am J Dis Child* 1978;132:97-8.
- [18]. Guerrant RL, Walker DH, Weller PF. *Essentials of tropical infectious diseases*. Philadelphia: Churchill Livingstone 2001:607-8.
- [19]. Guerrant RL, Walker DH, Weller PF. *Tropical infectious diseases, Principles, pathogens, & practice*. Philadelphia: Churchill Livingstone 1999:1341.
- [20]. Tseng CC, Ho CY (2005) Removal of a nasal leech: a safe and effective method. *Otolaryngol Head Neck Surg* ;132:814-5.
- [21]. Satyawati, SK, Singhal, AD. Multiple live leeches from nose in a single patient—a rare entity, *Indian J. Otolaryngol. Head Neck Surg* 2002;54(2):154-5.
- [22]. Foonant S, Puntasri W, Manorot M, Niwasabutra S. A leech in the nasal cavity: case report. *Chiang Mai Med Bull* 2006;45(1):27-30.
- [23]. 23. Oh TH, Gaudet T. Acute epiglottitis associated with nasal foreign body: occurrence in a 30-month-old girl. *Clin Pediatr* 1977;16:1067-8.
- [24]. Sarniak AP, Venkat G. Cephalic tetanus as a complication of nasal foreign body. *Am J Dis Child* 1981;135:571-2.