The Missing Piece Found after 25 Years: Foreign Body in Frontal Recess

Jia Ji Ng, Hui Yan Ong, Noorain Nadhrah Muslim, Shashi Gopalan Marimuthu

Department of Otorhinolaryngology, Tengku Ampuan Rahimah Hospital, Klang, Selangor, Malaysia

Abstract

Foreign body in the nose is relatively uncommon in adults. The occurrence of a foreign body in the paranasal sinuses is even rarer, and majority of the cases are associated with maxillofacial trauma. In contrast to the common presentation of foul-smelling nasal discharge, a foreign body in the paranasal sinuses may only produce vague symptoms. Their presence is frequently overlooked. Clinical suspicion and radiological investigations are essential for establishing a diagnosis. It is important to rule out the presence of foreign bodies in patients with maxillofacial trauma. We present a rare case of foreign body in the frontal sinus of a patient that was discovered after 25 years.

Keywords: Foreign body, frontal sinus, nose, sinus

INTRODUCTION

The presence of a foreign body in the nose is common in children, especially among those aged 2-5 years. They may be inert, hygrophilic, or corrosive (1). Depending on the nature of the foreign body, the patient may be asymptomatic or have symptoms of foul-smelling unilateral nasal discharge or blockage. Foreign bodies are commonly found anterior to the middle turbinate or along the floor of the nose, just below the inferior turbinate (2). In rare cases, they are found in the paranasal sinuses. Maxillary sinus is a common site for foreign body impaction. Frontal sinus is a rare site for foreign body impaction, in spite of its vulnerable location (3).

Typically, foreign body in the nose is discovered early, with the average age of 4 years old. It is reported that only 10% of the cases presented late as incidental findings (4). In chronic asymptomatic patients, it may take years to present and the object is likely to be inert. Foreign bodies in the paranasal sinuses produce vague symptoms; thus, their presence is frequently overlooked.

We described the case of a patient with a piece of glass in the frontal sinus that was discovered after 25 years when he presented with sinus complications.

CASE PRESENTATION

A 60-year-old man presented with unilateral, foul-smelling nasal discharge with nasal blockage that had persisted for the previous 6 months. He did not have fever, headache, or systemic symptoms. He had no previous allergic nasal symptoms. However, 25 years previously, he was involved in a major motor vehicle accident that caused bilateral blindness. He was unsure about the details of the other injuries he had sustained or procedures he had undergone.

He had scars on his face and had a prosthetic left eye; endoscopic nasal examination revealed polyps arising from the right osteomeatal complex extending to the posterior choana, with mucoid secretions. The left nasal cavity was normal in appearance.

The nasal polyps were biopsied and were found to be inflammatory polyps. He then underwent computed tomography of the paranasal sinuses (Figure 1) that revealed right antrochoanal polyps with hyperdensity, observed in the right anterior ethmoid air cells, along with bony destruction of the anterior wall of the right frontal sinus that may have resulted from previous insult or procedure.

He underwent functional endoscopic sinus surgery and intraoperatively, the polyps were seen arising from the right maxillary antrum till choana; pus was draining from the frontal ethmoidal complex. A foreign body, a piece of glass that measured 6x3 mm and obscured the frontal ostia was discovered incidentally (Figure 2, 3). The foreign body was removed.
The postoperative course was uneventful, with no nasal symptoms. During his recent visit, his right nasal cavity was clear, with patent right frontal ostium (Figure 4).

DISCUSSION

Foreign body in the nose is uncommon in adults. It commonly occurs due to trauma or a coexisting mental disorder (5). Paranasal sinuses are rare sites for foreign body impaction, and the majority is associated with maxillofacial trauma. Maxillary sinus is commonest site for foreign body dislodgement, as compared to other sinuses (1).

Various foreign bodies, such as glass pieces, bullets, metal endodontic instruments, and materials, have been reported in the paranasal sinuses (2). Few studies have reported a glass piece in the frontal sinus as a complication of maxillofacial trauma. In this case, the patient sustained maxillofacial trauma 25 years previously and had presented with nasal symptoms recently.

Patients with foreign bodies in the paranasal sinuses may have vague symptoms that present after the occurrence of complication or on imaging performed for another reason (3). Inert foreign bodies may remain in the nose for years without causing mucosal damage (5). However, with time, they can cause congestion, edema, ulceration, or mucosal destruction. As in this case, intraoperative observation showed inflammatory polyps with pus over the frontal ethmoidal recess.

Conventional plain radiography is the first line of investigation for detecting foreign bodies, while computed tomography is ideal for determining and localizing foreign bodies (6). Computed tomography is also superior to ultrasonography and plain radiography for detecting foreign bodies in the paranasal sinuses (7). The composition and size of a foreign body will determine its visibility on various imaging methods; thus, it may be missed out with one method but detected using another (6). Generally,
glass pieces are highly radio-opaque and can be detected in all areas of plain radiographs, computed tomography images, and ultrasonograms (6). However, all these results must be correlated clinically with the patient’s presentation history and physical examinations.

Foreign bodies in the frontal sinuses could also have other dangerous complications, such as meningitis, brain abscess, thrombophlebitis of the frontal lobe, focal epilepsy, and frontonasal duct obstruction (3). In our case, the patient was asymptomatic for 25 years and experienced nasal symptoms for 6 months. On removal of the unsuspecting glass piece, further history taking from the patient revealed that his car windscreen was shattered during the motor vehicle accident 25 years previously. In addition to causing blindness, one of the shattered glass pieces might have also traversed and remained dormant in the frontal ostium for 25 years.

Upon removal of the unsuspecting glass piece, further history from the patient revealed that his car windscreen was shattered during the motor vehicle accident 25 years ago. A defect in the medial wall of the orbit was noted from the CT scan. In view of the severity of the globes injury which resulted in him losing his eyesight, we would postulate that patient probably had transorbital penetrating injury back then. The shattered glass piece might have traversed transorbitally through the fractured sites and eventually transposed into the frontal recess where it remained dormant for all these years.

**CONCLUSION**

Clinical suspicion of foreign bodies should be raised when a patient with a history of maxillofacial trauma presents with nasal symptoms. Complete history taking and thorough physical examination along with the appropriate imaging are essential for establishing a diagnosis of foreign body in the nose or the paranasal sinuses.

**Informed Consent:** Verbal informed consent was obtained from the patient who participated in this case.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Author Contributions: Concept - J.J.N.; Design - J.J.N.; Supervision - S.G.M.; Data Collection and/or Processing - J.J.N.; Analysis and/or Interpretation - J.J.N.; Writing Manuscript - J.J.N., Critical Review - H.Y.O., N.N.M.

**Conflict of Interest:** The authors have no conflicts of interest to declare.

**Financial Disclosure:** The authors declared that this study has received no financial support.

**REFERENCES**

1. Sedat A, Şanlı A, Eken M, Hardal Ü. Glass particles in the frontal sinus. Turkish J Med Sci 2009; 39.
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. [CrossRef]
3. Viswanatha B, Naik LK, Karthik S, Kumar RA. A forgotten foreign body in the frontal sinus. Indian J Otolaryngol Head Neck Surg 2010; 62: 326-8. [CrossRef]
4. Mackle T, Conlon B. Foreign bodies of the nose and ears in children: Should these be managed in the accident and emergency setting? Int J Pediatr Otorhinolaryngol 2006; 70: 425-8. [CrossRef]
5. Kelesidis T, Osman S, Dinerman H. An unusual foreign body as cause of chronic sinusitis: A case report. J Med Case Rep 2010; 4: 157. [CrossRef]
6. Aras MH, Miloglu O, Barutcugil C, Kantarci M, Ozcan E, Harorli A. Comparison of the sensitivity for detecting foreign bodies among conventional plain radiography, computed tomography and ultrasonography. Dentomaxillofacial Radiol 2010; 39: 72. [CrossRef]
7. Kaviani F, Javad Rashid R, Shahmoradi Z, Gholamian M. Detection of foreign bodies by spiral computed tomography and cone beam computed tomography in maxillofacial regions. J Dent Res Dent Clin Dent Prospects 2014; 8: 166-71.