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FOREIGN BODY LODGES IN MAXILLARY SINUS VIA PREAURICULAR PENETRATION AND REMAINS FOR 2 DECADES

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Abstract: The occurrence of foreign bodies in the nasal cavity is relatively frequent, especially among young children. It is quite uncommon in adults, but it can occur in those who suffer from mental illnesses and psychosomatic problems. Several atypical foreign objects in the nasal cavity have been documented in literature. However, the presence of a foreign body entering the nasal cavity from a different entrance point rather than the nostrils and remaining lodged in the paranasal sinuses for a prolonged period is unusual. In this case, the diagnosis, treatment, and follow-up process of a shrapnel fragment that has settled in the maxillary sinus and persisted for 20 years will be discussed.

Keywords: Foreign body, Maxillary sinus, Adult, Preauricular Route.

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1. Introduction

The occurrence of foreign bodies in the nasal cavity is relatively frequent, especially among young children. Several atypical foreign objects in the nasal cavity have been documented in the literature (Botma et al., 2000; Chai et al., 2012). Plastic beads, sponges, toy parts, batteries, tiny food fragments (hazelnuts, walnuts, grain, seeds, etc.), and pieces of paper are the most frequently found foreign bodies in the nasal cavity. It is quite uncommon in adults, but it can occur in those who suffer from mental illnesses and psychosomatic problems (Figueiredo et al., 2006). A nasal foreign body might present obvious, but it can also go unnoticed and persist for weeks, months, or even years after insertion (Baranowski et al., 2022). There have been numerous reports of unusual foreign bodies in the literature. However, no case has been encountered that enters the maxillary sinus through external penetration and remains in it for a long time.

2. Case Presentation

We describe a case of a 43-year-old otherwise healthy man. He had a history of hospitalization due to a bomb explosion near him 20 years ago. He had left-sided grade 5 facial paralysis, according to Hause Brackmann Classification, after the incident. The patient was admitted to ENT outpatient clinic with complaining of left-sided foul-smelling nasal discharge and occasional nosebleeds. He did not have a fever or headache. The patient stated that he had this complaint for many years and had not received any treatment. His vital signs were in normal ranges. He had left grade 2 periferic facial paralysis according to Hause Brackmann Classification. A scar was detected in the left preauricular region (Figure 1).

Figure 1. Entrance of the foreign body.

There was purulent discharge from his left nostril, which was said that aggravated over time. The patient neglected the discharge from the nose due to the absence of a

headache or fever. Nasal endoscopy revealed a firm foreign body coated in purulent secretions. The rest of the physical examination was normal.

A computed tomography (CT) scan was performed. The appearance of a metallic foreign body extending from the maxillary sinus to the left nasal cavity was detected (Figures 2a, 2b, 2c, 2d).

Observation of metallic opacity in the nasal cavity on CT and learning that the patient was injured from the left preauricular region because of the bomb explosion 20 years ago suggested that this foreign body could be a fragment of shrapnel that has persisted since then.

The foreign body was removed under local anesthesia via a nasal endoscope and angled forceps (Figure 3, 4). Bleeding control was achieved by electrocautery. A control Waters and anteroposterior (AP) X-ray graphics were taken after the removal of the foreign body (Figure 5a, 5b). No residue was observed in control Waters and AP X-ray graphies. The patient was followed up at regular intervals. The completion of mucosal healing was seen through endoscopic control, and the patient's symptoms had disappeared by that time.

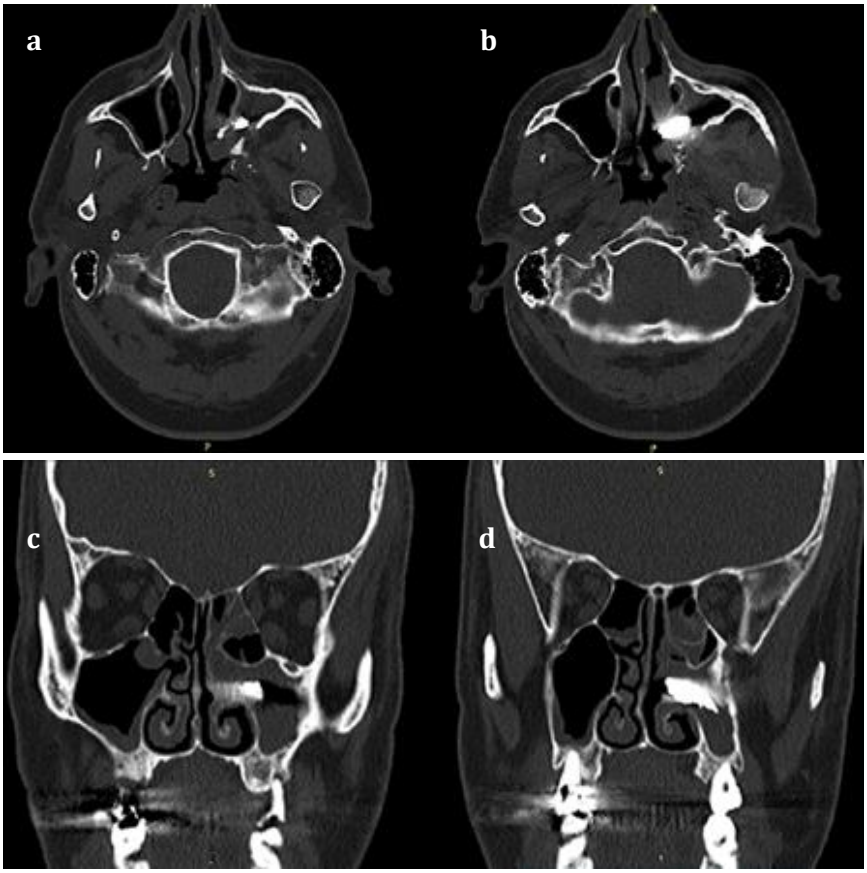

Figure 2. Paranasal sinus computer tomography, axial and coronal sections.

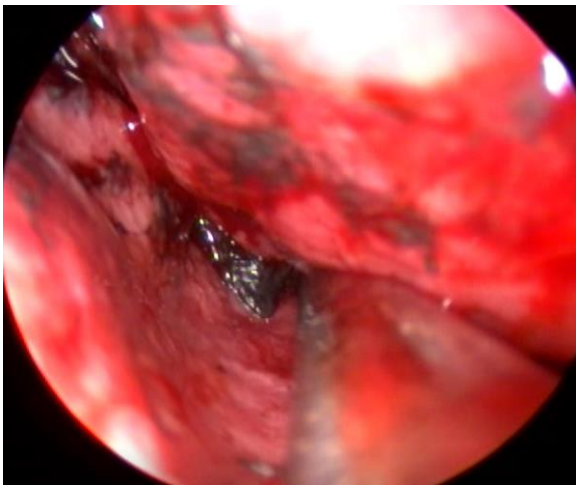

Figure 3. Endoscopic view of the left nasal cavity, the foreign body, marked with arrow.

Figure 4. Foreign body, removed.

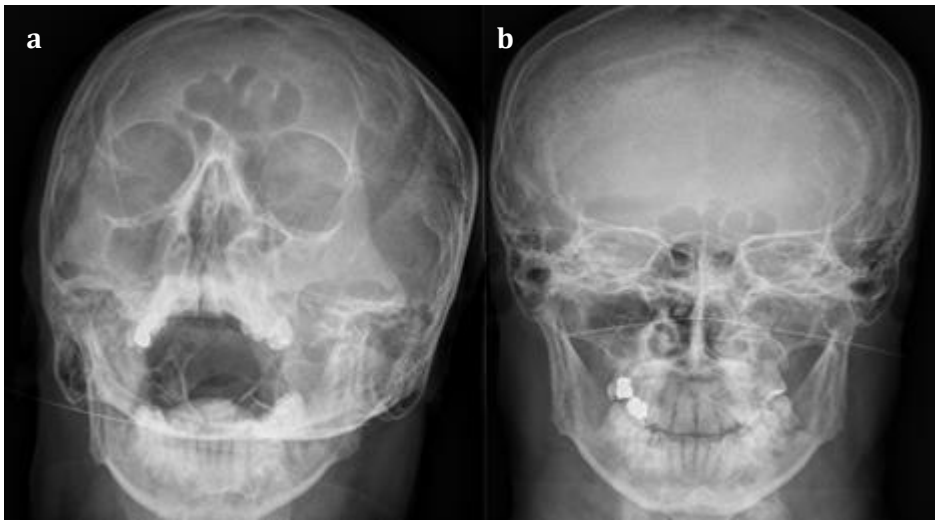

Figure 5. Waters and AP Direct graphy after removed foreign body.

3. Results and Discussion

Studies indicated that intra-nasal foreign bodies are often observed among children (Kharoubi, 2010). However, they are rare in adults and are generally caused by an injury, an accident, trauma, or associated psychiatric illnesses (Tay, 2000; Pellacchia et al., 2006). Usually, an unintentional foreign body is lodged or incarcerated in one or both nasal cavities by the anterior (vestibular) or, less frequently, the posterior (choanal) routes (Kharoubi, 2010).

If present, common symptoms include pain or discomfort, congestion, discharge, and malodor. The most common finding in individuals with a nasal foreign body is a unilateral mucopurulent nasal discharge with a malodor (Werman, 1987).

Nasal foreign bodies are mostly harmless, although they might potentially result in injury to the mucosal lining, haemorrhage, infection, and aspiration (Baranowski et al., 2022). Rare complications occur in approximately 9% of patients and include the following: nasal septal perforation, meningitis, sinusitis, acute epiglottitis, respiratory arrest, acute otitis media, periorbital cellulitis, tetanus (Baranowski et al., 2022).

Thus, the presence of a nasal foreign body may result in various serious consequences (Oh and Gaudet, 1977; Sarnaik and Venkat, 1981). The symptoms are typically evident early and can be diagnosed and intervened (Figueiredo et al., 2006). However, if a patient has a painless reaction, it may be difficult to diagnose (Tsukamoto et al., 2018). Some foreign bodies are inert and may remain in the nasal cavity for years without causing mucosal distortion (Kalan and Tariq, 2000). When dealing with unilateral symptoms, another differential diagnosis should be considered. These range from anatomical abnormalities (such as a deviated nasal septum or unilateral choanal atresia) to benign disorders (such as polyps and odontogenic sinusitis) to malignancy (van der Veen and Thorne, 2017).

Without general anesthesia, most foreign objects in the nasal cavity can be removed using forceps, curved hooks, catheters, and suction. However, the endoscopic procedure under general anaesthesia can be necessary if a foreign body is lodged in the ethmoid, maxillary sinus, or is embedded in the tissue (Wada et al., 2000; Figueiredo et al., 2006). In the presented case, the object was removed by endoscopic methods, but general anesthesia was not required.

As far as we know, it is the first case that entered the nose through external penetration and caused the development of grade 5 facial paralysis (according to the patient's history) and remained in the paranasal sinuses for an extended period.

4. Conclusion

Although intranasal foreign bodies are considered uncomplicated cases, they may become complicated if there is an entry point other than the nostrils and the patient is an adult. Clinicians should recognize the underlying cause for the chronic sinusitis. This case emphasizes the importance of history taking and broadening the differential diagnosis. Until proven otherwise, it should be assumed that a foreign body causes a single-sided nasal discharge.

Author Contributions

The percentage of the author(s) contributions is presented below. All authors reviewed and approved the final version of the manuscript.

	R.A.Ö.	M.S.U	E.O.
C	40	40	20
D	40	40	20
S			100
DCP	50	50	0
DAI	40	40	20
L	50	50	0
W	40	40	20
CR	35	35	30
SR	20	60	20
PM	35	35	30
FA	40	30	30

C= concept, D= design, S= supervision, DCP= data collection and/or processing, DAI= data analysis and/or interpretation, L= literature search, W= writing, CR= critical review, SR= submission and revision, PM= project management.

Conflict of Interest

The authors declared that there is no conflict of interest.

Ethical Approval/Informed Consent

Written informed consent was obtained from the patient for the case presentation, and necessary information was given to the patient. The research was conducted in accordance with the Principles of the Declaration of Helsinki.

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