

# Neglected Nasal Foreign body discovered by Nasal Deformity: A Case Report and Review of the Literature

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## Abstract

Foreign bodies of the nose are mostly common in paediatric population. In teenagers and adults, they are predominately seen in patients with mental disturbances. Usually with acute presentation, they also can remain in place for a long time.

The main clinical presentation is unilateral purulent rhinorrhea possibly associated, in chronic cases, to nasal deformities, nasomaxillary abnormalities or rhinolithes. The removal can require a surgical procedure under general anaesthesia specifically in front of neglected foreign bodies covered by mucosa or previous multiple failed attempts. We report the case of a 14-years-old girl, with mental retardation, who consulted in our structure for a swelling in the left nasal alar base evolving progressively since 4 months, with intermittent purulent rhinorrhea not improved after medical treatment. No incident of nasal foreign body insertion was reported or witnessed by the patient and its family. The facial CT scan confirmed the diagnosis and the removal required surgical procedure.

The diagnosis of neglected nasal foreign body should always be considered in front of unilateral nasal obstruction and discharge specifically in children and mentally disabled patients. Its removal should be rapid in order to avoid the constitution of rhinolithes and nasal deformities.

**Key words:** nasal deformity; rhinorrhea; foreign body; endoscopic surgery

## Introduction

Nasal foreign bodies are usually seen in emergency mostly in children or in adults with psychiatric illness or mental disabilities. [1] The nasal foreign body may be clinically obvious or may require further endoscopic exploration. In some cases, it can still silent for weeks, months, or even years after insertion. The removal can be done immediately or through surgical procedure.

We present a case treated in our Otorhinolaryngology department of the 20 August 1953 Hospital, that supplements and supports the literature and expose another way of discovery of chronic nasal foreign bodies.

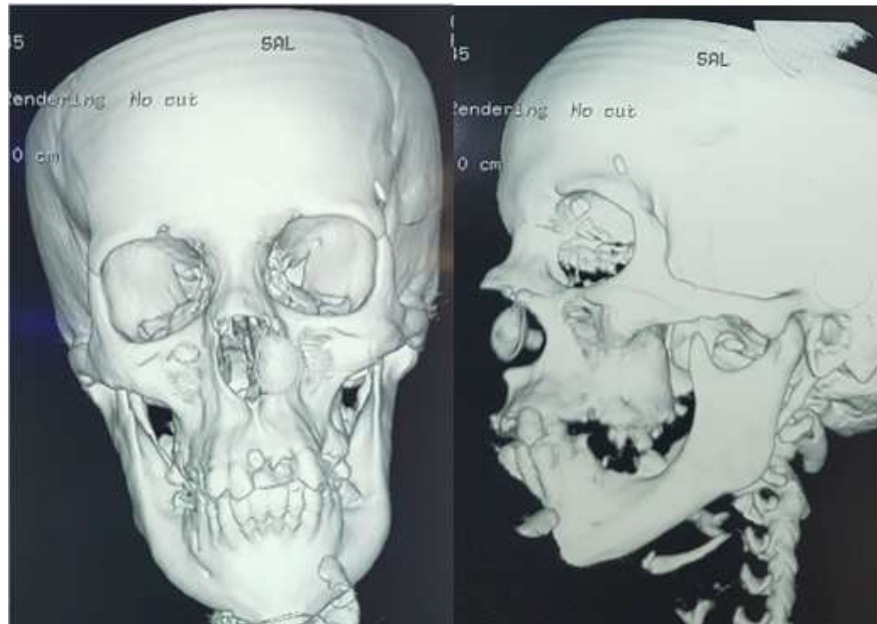
## Presentation of the case

We present the case of a 14-years-old girl, mentally retarded, with no other medical history, who consulted in our department for nasal deformity

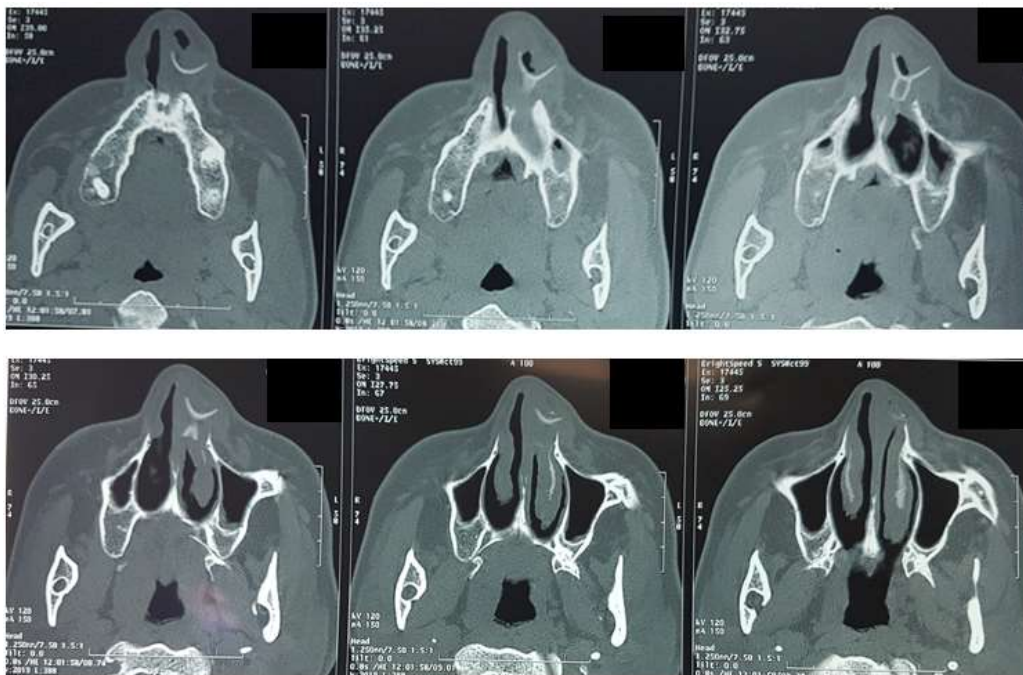
described as a painless and firm swelling in the left nasal alar base. The swelling appeared progressively since 4 months. No incident of nasal foreign body insertion was reported or witnessed by the patient and its family.

The patient also presented intermittent purulent rhinorrhea and slight left nasal obstruction not improved after multiple attempts of medical treatment by nasal steroids and antibiotics (amoxicillin, clavulanic acid).

The clinical examination of the nasal cavity showed hypertrophic left inferior turbinate with inflammatory pituitary mucosa and thick secretions. The facial CT scan allowed the visualisation of a nasal foreign body with the shape of a cup, measuring 1.5 cm, located behind the left inferior turbinate, totally covered by mucosa with an inflammatory reaction and thickening of all the surrounding tissues causing the alar region deformation with no bone or cartilage lysis. The maxillary sinus beside appeared normal and aerated. (Figure 1, 2)



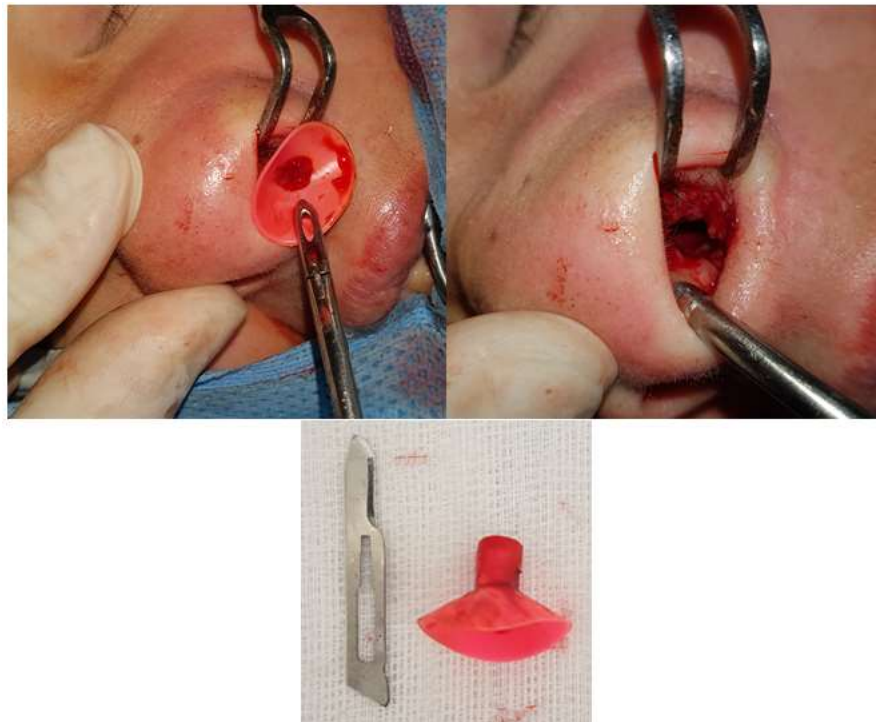
**Figure 1:** 3D reconstruction of facial CT scan showing the nasal foreign body.



**Figure 2:** Axial sections of facial CT scan showing the nasal foreign body.

The patient was prepared first by nasal saline spray and local steroids to reduce the mucosal inflammation. Then, the surgery was performed under general anaesthesia, by a senior resident with 5 years of specialised training, through an endoscopic approach. The first step consisted of an exhaustive exploration of the nasal cavity finding a hypertrophic inferior turbinate, an inflammatory mucosa, with no foreign body to be seen. In a second time, a

nasal stripper was used to decline the inferior turbinate medially then, with a sickle knife, the mucosa beneath was opened under continuous irrigation and suction. The foreign body started to appear after declining the mucosa and was extracted with a Blakesley straight forceps. It appeared to be a plastic suction cup bullet from a toysery gun shooter. (Figure 3)



**Figure 3:** Extraction of the foreign body.

The final surgical time consisted on placing a conformator in the nasal fossa in order to prevent synechiae and preserve the vacuity of the lumen. (Figure 4)



**Figure 4:** Conformator placed in the nasal fossa.

No particular immediate postoperative incident has occurred and the nasal alar base swelling decreased. The patient continued to apply nasal saline spray. We followed the patient regularly with controls each week until the removal of the conformator at 6 weeks postoperative. The nasal fossa was clean with normal turbinates and the deformity disappeared as the tumefaction progressively decreased.

This case has been reported in line with the SCARE 2020 criteria. [2]

### Discussion

Foreign bodies of the nose are mostly common in paediatric population, after developing pincer grasp at nine months of age. Children between 2 to 5 years are the most likely to insert objects in their nose in a matter of curiosity and body discovery, with an incidence slightly higher in boys and on the left side

probably due to right-handedness. However, repeated insertion of objects in body orifices can be a sign of psychiatric illness. [1] On another hand, nasal foreign bodies in teenagers and adults are usually seen in mentally disturbed persons as in our case. [3]

Globally, foreign bodies are classified as inanimate and animate or inorganic and organic. These last absorb the water from the surrounding tissue causing swelling of the mucosa, leading to mucosal erosions, ulceration, and epistaxis. Also, they tend to turn into rhinoliths due to the accumulation of minerals over them. [1] But, batteries and magnets seem to be the most harmful objects since direct leakage and the current generated between the anode and cathode by the tissue fluids cause corrosive damage, liquefactive and pressure necrosis leading to septal perforation within few hours. [1] However, Onal *et al.* [4] reported a case of an 18 years old girl with a

neglected battery in her nose, not remembering its intrusion, discovered in front of nasal congestion and rhinorrhea. The examination of the nasal cavity after the removal of the foreign body only found maceration and hemorrhage with no necrosis or perforation, suggesting that the remaining voltage of the battery was diminished.

In teenagers and adults, nasal foreign body are mostly related to mental retardation or psychiatric disability. They can occur in normal adults by accident or in some particular circumstances like reported by Alamgir *et al.* [5] where an iatrogenic foreign body, an intranasal splint, was left inside the nasal cavity of an operated patient and remained undiagnosed for one year. Also, a rare case of a nasal foreign body entering transcutaneously through a skin laceration during a facial trauma was reported by Mülazimoğlu *et al.* [6] In some cases, the foreign body is just forgotten in place as described by Kelesidis *et al.* [7] where a right nostril packing placed for a nosebleed 12 years ago remained and became calcified, and when the raw instrumental attempts to remove it failed, the patient refused its surgical extraction.

The clinical presentation of nasal chronic foreign bodies is foul-smelling purulent nasal discharge usually unilateral, with bloody stained rhinorrhea or even epistaxis. The patient often tells the intrusion of the foreign body in the nose while young children may only present with irritability, [1] and mentally disabled patients may not report it.

Neglected nasal foreign bodies may be sorted out as a special entity. [3] They tend to become encrusted with calcified material and become rhinolithes, [8] which often it is their extraction that indicates the diagnosis not usually suspected in adult persons. [3] They can also cause nasomaxillary abnormalities in the growing children and nasal deformities as in our case. [6]

Nasal foreign bodies are usually located in the floor of the inferior turbinate or anterior to the middle turbinate. The clinical examination requires a good lighting and a cooperative patient. If not, the patient should be immobilized by its parents in the case of children or general anaesthesia can be carried. Anterior rhinoscopy should be performed, if not enough, a fiberoptic nasopharyngoscope can be used as well. [1] The patient should be keenly examined specifically in front of atypical presentation and not resolving symptoms despite medical treatment. [5]

Imaging, nose X-ray or facial CT scan, may be needed if a battery or magnet is suspected or if no foreign body is visible while other signs are in favour. Unfortunately, many foreign bodies are radiolucent. [1] A rhinolite should be suspected if radiological exploration detects calcified mass in the nose together with chronic unilateral nasal symptomatology.[3]

Removal of nasal foreign bodies requires direct visualization and extraction using instrumentation. The object can be pulled directly out using alligators as in the case of paper or sponge material. Smooth, more spherical objects are best removed with a curette or probe inserted past the object and pulled forward. [1] Multiple attempts may be required and their failure rate can be up to 35%. [9] In the case of chronic foreign bodies not visualized, covered by mucosa, a declination of the turbinate can be necessary with an opening of the mucosa and even an opening of the beside sinuses if affected. After the extraction, a conformator can be kept in place in order to assure the vacuity of the nasal fossa and prevent synechia.

## Conclusion

Nasal foreign body should be always considered as a cause of unilateral nasal obstruction and discharge specifically in children and mentally disabled patients. [10] They should be diagnosed and removed as soon as possible. Imaging can be performed if clinical examination is not conclusive.

The removal should be rapid in order to avoid the constitution of rhinolithes and nasal deformities and can be surgical in front of chronic non visible foreign bodies. After removal, a visualization of the entire nasal cavity, endoscopically if possible, should assure its vacuity. Also, the foreign body should be examined to ascertain no part of it is missing inside. [6]

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