

## Case Report

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## What's in a Nose? A Case Report on Chronic Unilateral Rhinorrhea

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**Introduction and Importance:** Nasal foreign bodies often present acutely following insertion but may be missed by both family and health care providers, remaining in place for weeks, months, or even years after the initial event.

**Case Presentation:** We present the case of a 16-year-old female who presented in-office complaining of intermittent unilateral foul-smelling rhinorrhea. The diagnosis was confirmed by intranasal examination with a speculum, as well as a computed tomography scan. She underwent surgery, removing an eraser top for a pencil with subsequent resolution of symptoms.

**Discussion:** The diagnosis is based on the clinical history, physical examination and is supported by CT and exploratory surgery, this last one being also therapeutic.

**Conclusion:** This case of chronic unilateral rhinorrhea due to a foreign body reinforces the importance of clinical examination as well as full evaluation of the differential diagnosis of both acute and chronic rhinorrhea particularly in small and older children.

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**Introduction**

Nasal foreign bodies (NFB) often present acutely following insertion but may be missed by both family and health care providers, remaining in place for weeks, months, or even years after the initial event [1]. NFBs typically produce few symptoms and can be difficult to visualize. Eighty six percent of clinical presentations report a history of inserting foreign bodies, and other first symptoms typically include purulent nasal discharge, foul odors, epistaxis, and/or nasal obstruction and associated symptoms. More common in younger children, NFBs must always be considered in differential diagnoses if the patient presents with symptoms of nasal obstruction [2]. Important in the differential diagnosis is the assessment of unilateral vs bilateral vs predominantly unilateral symptoms such as headache, nasal obstruction, rhinorrhea and nasal purulence.

NFBs tend to become lodged in one of two locations in the nasal cavity: at the junction of the nasal septum and nasal cavity floor, inferomedial to the inferior turbinate; or anterior to the head of the middle turbinate, superior to the inferior turbinate [1]. Intervention is required on an urgent basis, particularly depending on the size of the object. While certain objects are large enough to not be able to be aspirated transnasally, it can become an oral airway if blown out during sleep and accidentally ingested and aspirated

orally. As well, the longer a foreign body remains in place, the greater the likelihood for foreign body reaction and further issues.

Patients usually present with foul-smelling purulent nasal discharge that is usually unilateral if an NFB is present. NFBs are typically painless; however, some children present with ipsilateral headaches to the foreign body. Moreover, bloodstained discharge or even epistaxis is not uncommon.

Obtaining an accurate patient history, including symptom laterality, is crucial to narrow the differential diagnoses for nasal obstruction [2]. The patient is a 16-year-old female who presented to the office with a 10-year history of unilateral foul-smelling rhinorrhea, with CT demonstrating a radiopaque foreign body in the nasal cavity.

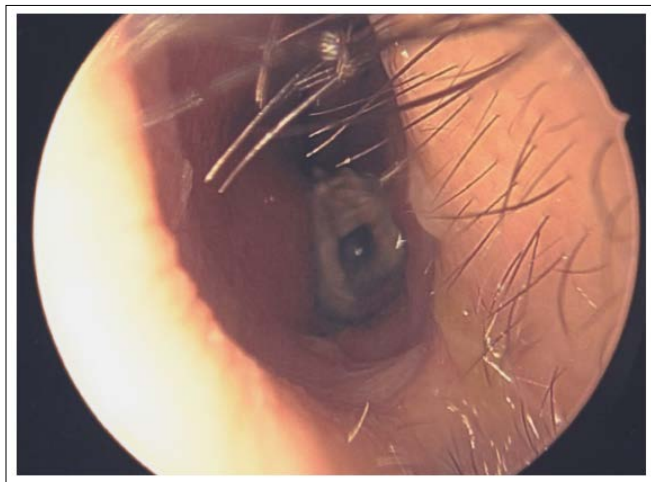
**Case**

A 16-year-old Hispanic female presents with a 10-year history of left side foul-smelling rhinorrhea. Aside from rhinorrhea and purulent discharge, she denied nasal obstruction, epistaxis, headache, or pressure sensation. The patient was unaware of any trauma to the nose. Her family was concerned about the smell from the patient.

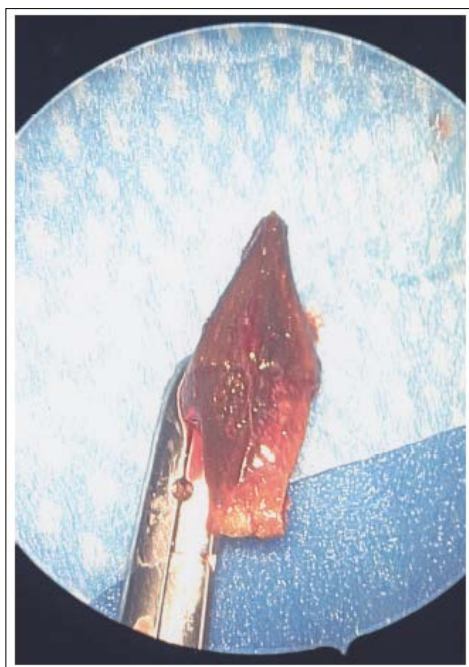
After her family noticed a foul smell many years ago, the patient saw her pediatrician, and underwent trials of various allergy medications including cetirizine and fexofenadine.

Intermittently, symptoms would clear. Though her family continued to be bothered by the odor, the patient did not notice it. The patient saw an allergist and received an allergy panel, which was negative. Additionally, the patient was prescribed antibiotics, which did not eliminate the smell.

Finally, while traveling abroad, a concerned family member took the patient for a CT scan. The scan demonstrated a left-side radio-opaque conical mass in the nasal cavity. See Figure 1 and 2.

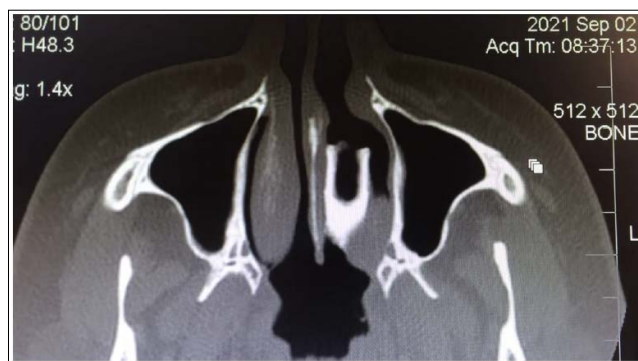


**Figure 1:** Intranasal View Depicting Foreign Body Approx. 3 cm into Left Nasal Cavity



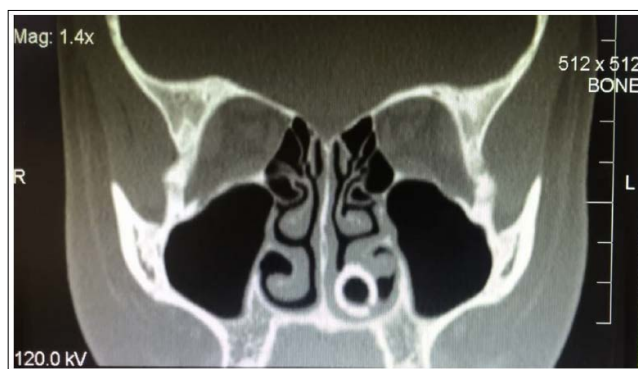
**Figure 2:** The Nasal Foreign Body (a Pencil Eraser) following Surgical Removal

On initial presentation, she was noted to have an oblong lesion in the foreign body with significant crusts and foul odor located approximately 3 cm into the nasal cavity along the junction of the nasal septum and nasal floor. Rigid endoscopy demonstrated that the conical item had significant crusts and appeared distinct from the surrounding tissues. See Figure 3. The remainder of the nasal exam was normal. After discussion about treatment options, the patient and her family elected for removal in the operating room.



**Figure 3:** CT Scan Depicting Left-Side Foreign Body (Axial View)

The patient was placed under general anesthesia and the object was removed. See Figure 4. There was evidence of significant remodeling of the inferior turbinate mucosa and bony structure, likely the result of the foreign body's prolonged presence. Due to the foreign body reaction, the surrounding mucosa required focal cauterization. Upon gross examination, the foreign body appeared to be a conical rubber eraser head, as seen on a pencil. There was significant erosion of the foreign object, as well as collected debris. Additionally, there was an extremely foul odor.



**Figure 4:** CT Scan Depicting Left-Side Nasal Foreign Body (Coronal View).

The patient was seen one-week postoperatively, healing well without complication.

### Discussion

Nasal foreign bodies often present acutely but can be missed and remain for weeks, months, or even years after insertion [1].

Foreign bodies tend to lie in one of two locations in the nasal cavity: the floor of the inferior turbinate or anterior to the middle turbinate [1]. In this case, the foreign body was located on the floor of the inferior turbinate, where it did not disturb the patient; in fact, it remained unnoticed by the patient for a decade. The patient only sought treatment due to complaints from her family, who were bothered by the foul odor.

Foreign bodies may act as a nidus for recurrent infections; Patients who have a nasal foreign body typically present with foul-smelling purulent nasal discharge that is usually unilateral [3].

Moreover, blood-stained discharge or even epistaxis might be witnessed in these cases.

In this case, the patient had no symptoms other than foul-smelling unilateral rhinorrhea; however, a lack of a thorough intranasal exam and unreported history of FB insertion resulted in an unseen NFB. As a result, the patient underwent medication trials, allergy testing, and prolonged psychosocial strain.

The diagnosis and subsequent treatment of this case reinforce the notion that long-standing unilateral rhinorrhea, particularly discharge that is purulent and/or foul-smelling, should be treated the same way as acute unilateral rhinorrhea in children.

Foreign body cases are not typically diagnostic dilemmas when they present in the emergency department; however, differentials should be approached differently when an adult patient presents solely with unilateral rhinorrhea. Clinical presentation of a foreign body can range from chronic nonspecific respiratory complaints to acute airway obstruction; patients may present with symptoms including noisy breathing, inspiratory stridor, rhonchi, or hoarseness [4, 5].

Additionally, this case emphasizes the importance of a thorough intranasal exam, regardless of symptoms or lack thereof. It is likely that during an acute infection, the NFB would not have been easily seen. However, during a relatively symptom-free interval, the NFB would have been visible.

### Conclusion

Nasal foreign bodies (NFB) often present acutely following insertion but may be missed by both family and health care providers, and remaining in place for weeks, months, or even years after the initial event [1]. More common in younger children, NFBs must always be considered in differential diagnoses if the patient – no matter what age – presents with symptoms of nasal obstruction [2].

In this case, a 16-year-old female who presented in-office complaining of intermittent unilateral foul-smelling rhinorrhea. After the diagnosis was confirmed by intranasal examination and a CT scan, the patient underwent surgery. An eraser top for a pencil was removed in surgery, and the symptoms subsequently resolved. The diagnosis and subsequent treatment of this case reinforce the notion that long-standing unilateral rhinorrhea, particularly discharge that is purulent and/or foul smelling, should be treated the same way as acute unilateral rhinorrhea in children.

Additionally, this case emphasizes the importance of an intranasal exam, regardless of symptoms or lack thereof.

### Disclosure Statement

The authors have nothing to disclose.

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