

# *Foreign Bodies in Pediatric Otorhinolaryngology*

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*Victor Eduardo Vera Martínez*

## **Introduction**

Foreign bodies have accompanied human beings since the beginning of human life. Some data have shown the existence of tobacco residues inside the external auditory canal and rhinoliths within nasal fossas of skulls. Foreign bodies are more common than one could imagine. We can frequently find them in regular consultations without giving them a second thought, unless they become a diagnostic or a therapeutic challenge.

## **Definition**

The term of “foreign body” means every animate or inanimate element, introduced in a voluntary or involuntary way inside ear, nose, mouth, pharynx, paranasal sinus, larynx or bronchi.

## **Etiopathogenesis**

We should consider that some adults have the bad habit of using inappropriate objects to clean the nose and ears. They use these objects even though they do not know how to remove them if they become trapped within the body. Children probably repeat those actions by observing what adults do, without having the consequences in mind.

When a foreign body is located inside one nasal fossa, it allows the patient to continue “normal” respiratory function and can remain intranasally without causing a true urgent condition. These foreign bodies can very often be introduced deeper into the nose, pulled by inspired air, in such a way that the patient cannot remove it anymore. At this point the foreign body is located posteriorly, occluding the nasal fossa and causing an urgent situation.

Foreign bodies are classified as: animate and inanimate, with subtypes of organic and inorganic. The most common foreign bodies we find are: bath sponge fragments, foamy materials from cushions, toilet paper, pieces of newspaper, tissues, plastic materials, earring components, necklace beads, coins. More recently, alkaline batteries used for watches, calculators, or hearing aid devices (which release substances such as mercury oxide, magnesium dioxide, potassium hydroxide, zinc hydroxide) with the potential risk of causing septal perforations and **sinequias**.

## **Diagnosis**

It is very important to get all the information from each patient. Clinical

examination requires some time, unless removal of the foreign body demands immediate action. The pediatric patient will not always be able to tell when and what exactly they introduced into their nose, ear or oropharynx. In these cases, the history should be obtained from a caregiver, taking into consideration the clinical signs and symptoms (for example, unilateral fetid mucus, purulent rhinorrhea is a characteristic sign of a foreign body in the nose, and the bad smell becomes very apparent not only to the patient but also to people surrounding him/her).

When an inanimate foreign body is located inside the ear, it is more difficult for the child to identify the sensation and the patient could be without any complaints for days, months or even years.

The most common sites of foreign bodies include the ear, nose, oropharynx, larynx and bronchus, although other authors would include other organs. The paranasal sinus is another location less frequently reported.

Why do foreign bodies occur? We have to understand that children enjoy being curious; they like to imitate adults, for example, introducing paper handkerchiefs to clean or scratch the nose. Children enjoy doing the same things that adults do, without expecting the consequences.

Another possible explanation could be that children use the foreign bodies to draw attention from adults by introducing several objects into the nose, ears, mouth or even unimaginable things! Children tend to repeat those actions if there is lack of attention from whoever is taking care for them.

Risk factors are closely related with the location of the foreign body. If there is a chance of airway obstruction, then it is necessary to act immediately.

Sometimes we have to deal with foreign bodies such as alkaline batteries or hearing aids. These elements can capture a child's attention, and later can result in an easy introduction into the nose, causing injuries related with substances they release. There is an extra risk when the foreign body has irregular, sharp margins.

In order to safely remove a foreign body, we must have sound anatomical knowledge, appropriate equipment and expertise, otherwise iatrogenic injury may occur. If the physician is not sure about the diagnosis and the proper treatment, the best thing to do is to refer the patient to an otorhinolaryngologist.

In all cases, the treatment of choice is to remove the foreign body? Yes, of course! But, how? The best approach will be the one which offers the best results versus the least invasive.

I had the opportunity to treat a fourteen-year-old boy, (D. M.) at the General Hospital of México, in collaboration with Dr. Rogelio Chavolla, the Head of the Department. Four years ago D. M. had a fight with another boy at school, but he never said a word to his parents (he was afraid of a parental punishment). Four years later, (he lived with some secretion in left eye, with an additional complaint of nasal obstruction with fetid secretion) he presented to our Hospital.

The treatment in this case included endoscopic surgery. We first retracted the inferior turbinate (local anesthesia/vasoconstriction was used to avoid bleeding and to create a better view of the surgical area). We did a minimal invasive endoscopic surgery to locate the foreign body. Using computed tomography, we looked for

the object, but it was not helpful. The foreign body was an impacted pencil, so the removal procedure was more difficult than we expected. Using a hook, we tried to split the pencil, but the pencil was too large, so we began considering an external approach as another possibility. We then focused on extracting the fragments of the pencil, leaving the pencil tip to the end. The entire pencil fragment was 5cm in length. The final step included exploration of the area in order to avoid leaving behind some other fragments. Patient follow-up showed a satisfactory recovery. Patient denied any pain, obstruction, ophthalmic or nasal secretions.

### **Conclusions**

Situations as described in the previous case, lead us to think about the consequences of treatment procedures only in an internal surgical approach, because we were too worried about the scar from the esthetic point of view. Depending on the circumstances, it may be better to do an external surgical incision to complete the surgical procedure (facilitating the complete removal of the foreign body) with as little damage as possible, avoiding any iatropathogenesis.

We need to have in mind that foreign bodies are common findings in pediatric patients, so we need carefully to establish the best treatment plan for each case, taking into account several options which will offer the best results to our patients.

### **Recommended readings**

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