

# *Foreign Bodies in Otorhinolaryngology: A Study of 128 Cases*

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## **SUMMARY**

- Introduction:** The occurrence of foreign bodies in otorhinolaryngology is a cause of frequent consultations in the urgency service.
- Objective:** The objective of this work is to describe a number of patients with foreign bodies, as well as to evaluate the clinical picture and the treatment of these cases.
- Method:** We carried out a prospective study of 128 patients with diagnosis of nose, ear and oropharynx foreign body, attended in the emergency room of the Hospital Paulista de Otorrinolaringologia, São Paulo, in the period from August 2005 through august 2007.
- Results:** They were 67.18% of cases of foreign body in the ear; 18.75% cases in the nasal cavity and 14.07% in the oropharynx. Out of these patients 55.47% were men and 44.53% were women. The mean age was of 17 years. The evolution time average was of 12.2 days, and 57.03% of the cases were attended with less than 24 hours of evolution. From the total of patients, 64.85% received initial service in the Emergency Room of the Hospital and 35.15% had been sent from another service after some previous removal attempt. The most common symptom of the cases of foreign body in the oropharynx was odinophagia, which was present in 88.88% of the cases; of foreign body in the nose, unilateral rhinorrhea, present in 37.5% of the cases and cacosmia in 25% of the cases; and in the foreign body in the ear, 39.53% evolved with hypacusis.
- Conclusion:** Most of the cases with prior manipulation for removal of the foreign bodies by non-skilled professional or laymen evolved with complications.
- Keywords:** foreign bodies, otolaryngology, ear, nose, pharynx.

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## INTRODUCTION

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Foreign bodies (FB) are frequent reasons of consultations in Otorhinolaryngology. The most commonly affected sites are the nasal cavity, ears and oropharynx. In these regions the foreign bodies have characteristic symptoms and their removal does not represent a great difficulty for the specialist. The inoculation form may be voluntary or accidental (1,2,3).

According to several authors (1,4,5,6), the FB correspond, on average, to 11% of the cases of Emergencies in Otorhinolaryngology and may evolve with complications in 22% of the cases. Such complications are mostly simple, but eventually more severe pictures such as tympanic perforations and bronchoaspiration may occur (6,7).

Several factors are critical for the occurrence of complications, like the attempt to remove by onlookers and unskilled health professionals; the inexperience of the clinician in the handling of foreign bodies; lack of suitable hospital infrastructure; poor structuring of the public network for Otorhinolaryngology Emergencies and long permanence of the foreign body (1,6,8).

The great potential for complications during the removal of such foreign bodies makes the operation of the otorhinolaryngologist crucial in this procedure. The FB removal success depends on the patient's cooperation, the doctor's ability, the type of FB, the previous manipulation, the visibility and depth of the FB and the available equipment (2).

Because the occurrence of FB involving the nasal cavities, ears and oropharynx is a reason for frequent consultations in otorhinolaryngology emergency services, its time of permanence is what will determine the symptomatology, since the cases of FB are seldom asymptomatic. In the nasal cavities, the symptoms start with sneezes, hyaline rhinorrhea and nasal obstruction, and evolves within some days into unilateral fetid and purulent rhinorrhea. In the ears the picture may start with hypacusis, otorrhagia, otorrhea or tinnitus. In the oropharynx, the main symptom is odinophagia (1,2).

As for the modes of insertion of the FB, we may divide them into voluntary or accidental. The voluntary insertion occurs mainly in children and the accidental, more common in adults, is represented by living animals, and the myiasis is commonly found and associated to the most severe complications (2,9). The first years of life are for children a phase of exploitation and interaction with the environment. When she begins to crawl and/or walk, the child begins to have access to a large variety of objects,

which she ends up, by curiosity putting into more exposed holes such as ear, nose and oropharynx (10).

The shape and the size of the objects found to be FB may determine the difficulty for removal. In the ear FB there may occur complications due to the small dimensions of the external acoustic meatus and the vicinity of important structures (2,4). The removal becomes difficult when the FB is close to the tympanic membrane, due to the risk of its perforation. Among the most frequent complications, we may find: laceration of the external acoustic meatus, tympanic perforation, external otitis and hematoma. The cases of nasal cavity FB may evolve into epistaxis, septal perforation and rhinosinusitis according to their time of evolution and location (1,2).

The objective of this study is to describe a number of patients with foreign bodies in the Otorhinolaryngology Service of the Hospital Paulista de Otorrinolaringologia - São Paulo, as well as to evaluate the clinical picture and the treatment in such cases and their complications.

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## METHOD

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We carried out a prospective analysis of 128 patients with diagnosis of nose, ear and oropharynx foreign body, attended in the emergency room of the Hospital Paulista de Otorrinolaringologia, São Paulo, in the period from August 2005 through august 2007.

We took into consideration the age, sex, location of the foreign body, time of insertion and removal of the foreign body, type of foreign body, complications and most common symptoms.

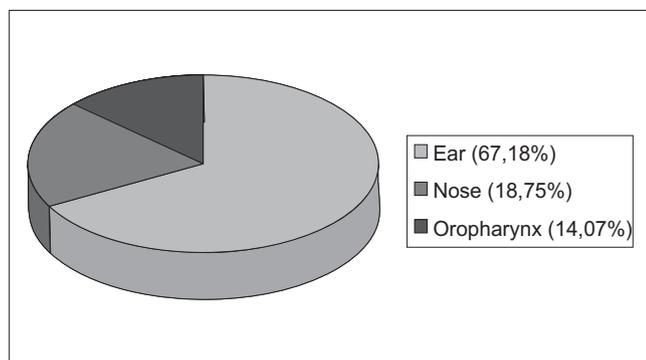
The material used for removal of foreign bodies includes nasal and auricular specula, Bruenings tongue depressor, flexible and rigid optical fibers of 4mm of diameter (70°, 0° and 30°), Kelly and bayonet tweezers, optical fiber laryngoscope, Hartmann and alligator tweezers, leak and sharp hooks, ear washing syringes and electric ear washer. In only 12 patients (9.3%) there was the need for removal in the surgical center with general anesthesia.

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## RESULTS

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We analyzed 128 cases of FB in otorhinolaryngology: 86 (67.18%) cases of ear; 24 (18.75%) of nasal cavity and 18 (14.07%) of oropharynx (Graphic 1). As for the sex of the patients we verified 71 (55.47%) cases of men and 57 (44.53%) of women. The age ranged from 2 -78 years and the mean age was of 17 years. Out of the age ranges, 41 patients (32.03%) were in the 0-10



**Graphic 1.** Distribution of the foreign bodies in otorhinolaryngology

years age range, 9 (7.03%) between 11-20 years, 74 (57.81%) between 21-59 years and only 4 (3.15%) older than 60 years (Table 1).

The evolution time average was of 12.2 days, and 73 (57.03%) cases were attended with less than 24 hours of evolution. From the total of patients, 83 (64.85%) received initial service in the Emergency Room of the Hospital Paulista and 45 (35.15%) had been sent from another service after some previous removal attempt. The cases of FB in the ear presented an evolution time average of 11.76 days. The cases of FB in the nose presented an evolution time average of 38.03 days. For the cases of FB in the oropharynx, the average was of only 1.83 days.

According to the location, out of the 86 auricular FB, 45 (52.32%) were inserted in the right ear, 39 (45.34%) in the left ear and 2 (2.34%) in both ears. In the nose FB 9 (37.5%) involved the right nostril and 14 (58.33%) the left nostril and only 1 (4.17%) involved both nostrils. Out of the cases of oropharynx FB, 5 (27.77%) occurred in the right tonsil, 7 (38.88%) in the left tonsil and 6 (33.33%) in the basioglossus region.

Among the auricular FB 44 (51.16%) were removed with alligator tweezers; 29 (33.73%) with ear irrigation with warm water by means of syringe or electric ear washer; 5 (5.82%) with otological curette for earwax and 8 (9.31%) cases required removal in the surgical center. Out of 24 patients with nasal FB, 18 (75%) were submitted to extraction with Itard probe; 5 (20.83%) with alligator or bayonet tweezers and only 1 (4.17%) required removal at the surgical center. As for the oropharynx cases, 15 (83.33%) were removed with Hartmann tweezers and in some cases it was necessary to use (flexible and/or rigid) optical fiber to improve visibility, and in 3 (16.67%) cases it was only possible in the surgical center by means of general anesthesia. The 12 (9.37%) cases that required forwarding to the surgical center with the help of general

**Table 1.** Frequency of foreign body cases according to the age range and region affected.

Age	0-10 years	11-20 years	21-59 years	> 60 years	Total
Region					
Ear	23	4	56	3	86
Nose	18	2	4	0	21
Oropharynx	0	3	14	1	18
Total	41	9	74	4	128

**Table 2.** Symptoms related to the presence of foreign body according to the region affected.

Region	Symptoms	Frequency
Ear	Without symptoms	26
	Hypacusis	34
	Earache	21
	Fever	2
	Otorrhea	2
	Tinnitus	1
Total		86
Nose	Unilateral Rhinorrhea	9
	Cacosmia	6
	Without symptoms	9
Total		24
Oropharynx	Odinophagia	16
	Without symptoms	2
Total		18

anesthesia, it was due specially to the lack of collaboration of the patients, mainly in the children and in the cases of oropharynx due to the intense nauseous reflex.

The most common symptoms of the ear FB cases were hypacusis with 34 (39.53%) cases and earache with 21 (24.41%) cases. In the nasal FB, the unilateral rhinorrhea was present in 9 (37.5%) cases and cacosmia in 6 (25%) cases. In the oropharynx FB, the main symptom was odinophagia with 16 (88.88%) cases (Table 2).

The most frequent ear FB was cotton, with 37 (43.02%) cases, followed by plastic artifact with 16 (18.60%) cases. In the most frequent FB in the nasal cavity, we found the same number of fragments of brush and paper with 8 (33.33%) cases each. In the oral cavity the most common was fish-bone, with 13 (72.22%) cases (Table 3).

Only 18 (14.06%) cases of complications were found, resulting from the presence of the FB or from their

**Table 3.** Frequency of the type of foreign body according to the region affected.

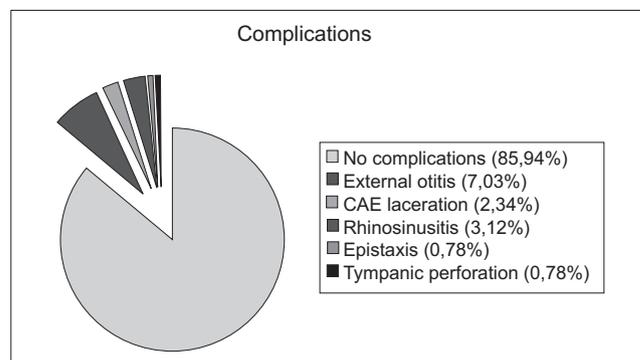
Region	Symptoms	Frequency
Ear	Cotton	37
	Plastic fragments	16
	Silicon	7
	Seed (beans, corn)	6
	Insects	5
	Metal structures	4
	Hair line	2
	Glass beads	2
	Others	7
	Total	
Nose	Sponge fragments	8
	Paper fragments	8
	Seeds	2
	Metal structures	2
	Others	4
Total		24
Oropharynx	Fish-bone	13
	Greens stalk	3
	Others	2
Total		18

manipulation. Out of the ear FB cases, 9 (7.03%) cases presented with acute external otitis; 3 (2.34%) cases had laceration of the external auditory meatus and only one (0.78%) case of tympanic perforation. In the nasal FB, 4 (3.12%) cases evolved into rhinosinusitis and one (0.78%) case into epistaxis. The cases of FB of the oropharynx region no complications were found (Graphic 2).

## DISCUSSION

The otorhinolaryngologists deal with a major parcel of natural corporeal holes by which the foreign bodies may be introduced, such as: ear, nose and mouth. The esophagus and the lower airways are indirectly reached, since the foreign bodies must first pass through the pharynx or the nasal cavities. Some authors stand out that the oropharynx and nasal cavities FB are potential esophageal and bronchial FB (1,7,8). We thus know that such accidents may lead to severe complications and even to death, although in this study we did not observe any fatal outcome.

Our data agree with the literature (2,5,8,11,12,13) concerning the location of the foreign bodies, with predominance in ears, followed by the nasal region and oropharynx. As for sex, compared to other authors (2,5,8), we found no statistically significant differences.

**Graphic 2.** Frequency and types of existing complications for removal of foreign body.

The distribution by age range shows a clear predominance of FB in the nasal region in children, which was also confirmed in other studies (1,2,8,14). We observed the incidence diminishing according to the age increase. Such fact may be explained by the curiosity and discovery concerning the body. With growth and cognitive development, the introduction of FB in the nostrils diminishes significantly, which is found only in patients with psychiatric disorders (2,15). But the foreign bodies in oropharynx are mostly found in adults, while those in the ear show a more balanced distribution, which disagrees with the literature (2,8,11,16).

The time of evolution was lower than 24 hours in 57.03% of the cases, similar to that found in the studies by IKINO et al (1998) and TIAGO et al (2006). The oropharynx FB evolution time average was of only 1.82 days, which may be explained by the discomfort due to the presence of FB in this region. The cases of FB in the nose was the one that mostly presented a high average of evolution time with 39.03 days, as that of ear FB was of 11.76 days.

The high incidence of fish-bone as oropharynx foreign bodies reflects the lack of care and attention in the preparation of food and chewing, mainly with small fish. In the cases of ear FB, the cotton was the mostly found, mainly for the habit of the population to use cotton swabs for cleaning and relief of otological pruritus. In children we found more varied plastic fragments, since piece of toys, buttons, up to glass beads, etc. Sponge and paper fragments, generally removed from pillows, mattress, books and notebooks were the mostly found nasal foreign bodies. The case of animated foreign body in our study represented only 5 cases, all in patients older than 20 years old.

The most common symptoms of the ear FB cases were hypacusis with 39.53% of the cases and earache with 24.41% of the cases. In the nasal FB, the unilateral rhinorrhea was present in 37.5% of the cases and cacosmia in 25% of

the cases. In the oropharynx FB, the main symptom was odinophagia with 88.88% of the cases, due to the extreme discomfort, aiming to seek early service.

The materials and methods used for removal of the FB from the ear, nose and oropharynx were similar to those presented in studies by MARQUES et al (1998) and TIAGO et al (2006). Only in 9.37% of the cases it was necessary to lead to the surgical center with the help of general anesthesia, it was due specially to the lack of collaboration of the patients, mainly in the children and in the cases of oropharynx due to the intense nauseous reflex. What was shown in the other studies was that the relationship between the need for general anesthesia for removal of FB ranged from 8.6 to 30% (17).

We found complications in 14.06% of the cases. Most authors verified a higher incidence of complication in cases previously manipulated by physicians of other specialty, other health professionals, the own patient and even other laypeople.

In our study, the most frequent complications were of acute external otitis (7.03%) evolving into earache, and the treatment was made with topical drops, and symptomatic: acute rhinosinusitis (3.12%) with purulent rhinorrhea and nasal obstruction, for which we prescribed systemic antibiotics for 14 days and nasal washing with physiologic solution, laceration of the external auditory meatus (EAM) with 2.34%, epistaxis (0.78%) of low quantity, that did not require any contention mechanism, and tympanic perforation (0.78%) that was treated and followed up in the service.

## CONCLUSION

With this study we observed that most cases with prior manipulation for removal of the foreign body by unskilled professional or by laypeople evolved into complications and showed that the management of such patients must be carried out by the otorhinolaryngologist and with the use of suitable material.

The large number of cases of foreign body in the ear, nose and throat are easily solved; but it is critical to remark that in cases where there is technical difficulty or lack of cooperation of the patient, we must choose the removal in a surgical center under sedation or general anesthesia, by thus avoiding iatrogenic complications.

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