

VIDEOS IN CLINICAL MEDICINE
SUMMARY POINTS

Removal of Foreign Bodies from the Ear and Nose

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The following text summarizes information provided in the video.

OVERVIEW

This review will acquaint the clinician with the clinical presentation of patients with a foreign body in the external auditory canal or nasal passage and the most effective techniques for smooth and safe retrieval. The first attempt at the removal of a foreign object is the one most likely to succeed.

INDICATIONS

It is fairly common for patients to present with a foreign object in the ear canal or nose. In many instances, these patients are curious children or adults with mental disabilities. Although foreign objects can be annoying to the patient, their presence rarely constitutes a true emergency and most can be removed swiftly and smoothly in a timely fashion.¹ However, certain foreign objects, such as batteries and magnets, carry a serious risk of extensive and permanent damage. Since tissue damage from batteries and magnets can occur within hours after insertion, these objects must be removed as soon as possible.²

CONTRAINDICATIONS

Certain techniques of removal are contraindicated for specific categories of foreign objects. Irrigation should be avoided when the irrigation fluid may cause additional problems. For example, some foreign objects, such as beans, are hygroscopic and swell when exposed to water.³ Batteries and magnets are reactive, and the use of an irrigant may lead to more tissue damage. In addition, irrigation should not be used when the patient has a perforation of the tympanic membrane.

Grasping forceps should be used with care when removing an insect from the external canal. It is helpful to drown the insect before attempting to remove it, in order to prevent the insect from digging its legs into the lining of the external auditory canal. In addition, if the forceps is closed completely around the insect, fragmentation may occur, making complete removal more difficult.

When a foreign object is impacted in the external ear canal, the pain is so extreme that there is little possibility that a patient will be able to tolerate its removal while awake. An attempt to remove the impacted object while the patient is awake is also likely to cause lacerations and bleeding. Consequently, a strong case can be made against manipulation of the object while the patient is awake. Instead, arrange for removal while the patient is under general anesthesia in the operating room. The degree of pain caused by an impacted object will not be controlled with the level of sedation available in most emergency departments.

PREPARATION

Introduce yourself to the patient and family and fully explain the procedure. Most children will require immobilization, and a papoose board is very useful. Explain

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the need for the papoose board to the family; point out that its use will improve the likelihood of successful removal of the object and obviate the need to go to the operating room. To lessen the time during which the patient is restrained, delay positioning the patient on the papoose board until you are ready to begin the procedure.

Removal of foreign objects from the nose is facilitated by combining a topical decongestant (0.05% oxymetazoline) and an anesthetic agent (4% lidocaine) and administering three or four drops of the mixture 3 to 5 minutes before initiating the procedure. This will decongest the inferior turbinate. After waiting 3 to 5 minutes, administer another three or four drops. The second administration will decongest the middle turbinate. Completing these steps will improve your visualization of the object, give you more space to work, and make the procedure more comfortable for the patient.





Instrument	Type of Foreign Body
	Graspable (e.g., paper, cotton, or foam)
	Nongraspable round, smooth, or free-floating (e.g., bead, bean)
	Nongraspable round, smooth, or free-floating (e.g., bead, bean)
	Nongraspable round, smooth, or friable (e.g., bead)

Figure 1. Recommended Instruments for Removing Foreign Bodies from the Ear, According to Type of Foreign Body.





Instrument	Type of Foreign Body
	Graspable (e.g., piece of paper, toy part, cotton, or foam)
	Graspable (e.g., piece of paper, toy part, cotton, or foam)
	Nongraspable round or smooth (e.g., bead, bean, magnet, or battery)
	Nongraspable round, smooth, or free-floating (e.g., bead, bean, magnet, or battery)

Figure 2. Recommended Instruments for Removing Foreign Bodies from the Nose, According to Type of Foreign Body.

PROCEDURES AND EQUIPMENT

The technique you select to remove an object from the nose or the ear is determined by the nature of the object; thus, it is important to become adept in the performance of several techniques. Excellent visualization of the object and the surrounding anatomy is crucial and is enhanced by appropriate illumination. Immobilization of the patient (primarily children) is critical for success.

An array of instruments in a variety of sizes should be within reach before you begin the procedure. For the removal of objects from the ear, you will need specula in several sizes, a handheld operating otoscope, alligator forceps, suction tips, wire loops, right-angle hooks, and curettes (Fig. 1). The use of a basic surgical microscope is recommended if one is available. Irrigation typically causes little discomfort for the patient and is often successful.

For the removal of objects from the nose, you will need a headlight and handheld nasal specula or an otoscope fitted with a nasal speculum. You will also need Tobey or bayonet forceps, wire loops, right-angle hooks, curettes, and suction tips of various sizes (Fig. 2).⁴

Objects can be divided into two basic categories: graspable and nongraspable. Graspable objects, such as pieces of paper, have a visible edge. For patients who have a graspable foreign object in the ear canal or nose, grasping forceps can be effective. In the ear, alligator forceps are the best size and the most useful for graspable objects; in the nose, the larger Tobey forceps are preferred. In all instances, it is important to refrain from clamping down on fragile objects, which may crumble and become more difficult to remove.

Nongraspable objects are spherical and do

not have a discrete edge. Right-angle hooks can be used to remove spherical objects from the ear canal or nose. The hook is passed beyond the object, rotated 90 degrees, and used to coax the object forward and out of the orifice. This technique can also be performed with the use of other instruments, such as a wire loop or a curette.⁵

Spherical objects can also be removed with the use of the suction technique. Under direct visualization, the suction tip is aligned with the object, with the finger hole of the suction tip open; when the tip abuts the object, the finger hole is occluded to create suction. The suction tip and the foreign object are then removed as one unit (Fig. 1 and 2).

Irrigation can be used to remove objects that are lodged in the external auditory canal. The patient should assume a sitting position, and a basin should be held snugly beneath the external canal to capture the irrigant and the foreign object. A brisk spray of water, warmed to body temperature, should go beyond the object and flush it out into the basin.

COMPLICATIONS

Complications associated with a retained foreign object in the external auditory canal may include ear pain, infection, aural drainage, and conductive hearing loss. Complications associated with the removal of the foreign object can include abrasions and bleeding in the external canal, rupture of the tympanic membrane, and on rare occasions, ossicular disruption with hearing loss and vertigo.⁶

A retained foreign object in the nose may result in sinusitis. If the object is a battery or a magnet, permanent tissue destruction is possible. The most common complication from the removal of a foreign object from the nose is minor epistaxis.⁷

SUMMARY

Successful removal of a foreign body from the external auditory canal or the nasal passage depends on the size, shape, texture, and composition of the object, the length of time the object has been lodged, the patient's anatomy, the presence or absence of infection, and the number and nature of any previous attempts at removal. The likelihood of success for retrieval in an outpatient setting decreases with each additional attempt.

It is important to keep the patient still by means of passive restraint or sedation and to use appropriate equipment with excellent illumination. Experience by the operator in the removal of foreign objects will increase confidence, improve technical skills, and increase the likelihood of success.

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Disclosure forms provided by the author are available with the full text of this article at NEJM.org.

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