

MANAGEMENT OF COMMON FOREIGN BODIES IN OTOLARYNGOLOGY FOR THE FAMILY PHYSICIAN —TIPS AND PEARLS

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ABSTRACT

Foreign body management is an important aspect in the practice of a general practitioner¹. In Singapore, the most common foreign body we encounter would be fishbone. This is not surprising as steamed fish is a common dish in our Asian diet. In spite of the rapid advances in medical technology, a good history taking and physical examination remain the most important step in helping us clinch a diagnosis. In this article, we will focus on the common foreign bodies seen in the Ear, Nose and Throat area as a general practitioner, and the tips and pearls in the examination and management. In each section, there will also be some tips on the red flags to look out for and when a tertiary referral should be made.

Keywords:

Fishbone, Mediastinitis, Button Battery, Tympanic Membrane Perforation, Airway Foreign Body

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INTRODUCTION

Foreign body management is an important aspect in the practice of a general practitioner. Most of the patients who have a foreign body lodged in the throat will come to the clinic with complaints of the sensation of something stuck in the throat; typically after a meal. In the vast majority of the patients, they will remember the incident and will be able to recall the type of foreign body they had accidentally ingested and the time when it occurred. The most common presentation would be an edentulous patient who choked on a foreign body while eating. This group of patients usually reports that they have a reduced texture sensation and this often caused them to be unable to differentiate the bone embedded within the meat.

In Singapore, the most common foreign body we encounter would be fishbone. This is not surprising as steamed fish is a common dish in our Asian diet. The type of fish we use, and the way we prepare the fish also contributes to the high incidence of fishbone ingestion in our local setting.

Besides the edentulous elderly patient, the other group of patients we commonly encounter would be young children. The type of foreign body can be widely varied. Amongst the types of foreign body we have seen in and removed from a child, the most dangerous ones would be button batteries. In the latter part of this article, we will review some of the common foreign bodies in children.

WHAT DO WE DO WHEN WE SUSPECT A FOREIGN BODY?

In spite of the rapid advances in medical technology, a good history taking and physical examination remains the most important step in helping us clinch a diagnosis. An imaging study such as an X-ray or computed tomography scan (CT scan) is only useful in helping to localise a radiopaque object in a suspicious case. It should not be used as a solo modality without a good history taking and clinical examination. The decision to refer to an otolaryngologist and to pursue surgical intervention should be based on history and physical examination that suggest the presence of a foreign body rather than on radiography alone.

History Taking

The history taking in a patient with a suspected foreign body should include asking questions related to the time of incident, the type of foreign body ingested, and the symptoms that developed after the incident such as the onset, site, nature of pain and any migration of pain. Most patients will complain of immediate pain following the ingestion of a foreign body. A patient who has a foreign body embedded in the tonsils may be able to localise the side of pain whereas one with a foreign body embedded in the oesophagus will tend to complain of midline pain. The pain is generally worsened with swallowing saliva and food.

Some of the red flags in the history will include the presence of fever, haemoptysis and chest pain. These patients should be referred to the hospital and a chest X-ray or a CT scan of the chest may be required.

The presence of chest pain usually signifies that the foreign body is lodged in the thoracic oesophagus but it could also be a foreign body lodged in the bronchus or a manifestation of mediastinitis. Such symptoms should be treated with caution.

Fever usually occurs in response to an infection or an inflammation. The presence of fever in a patient with a swallowed foreign body may be a sign of a developing infection such as an abscess or mediastinitis. These are known complications from foreign body ingestion and can occur in any patients with an embedded foreign body, but more commonly in elderly, immunocompromised patients or one who has a foreign body that has perforated through the oesophagus.

Haemoptysis is not a common presentation in a patient who has swallowed a foreign body. If present, it can be a symptom of an aorto-oesophageal fistula. Aorto-oesophageal fistulas are a rare but usually fatal complication of an embedded foreign body. It is an abnormal communication between the oesophagus and the aorta and the patients can present with a

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Table 1: Summary of history taking and physical examination results.

History taking	Physical Examination
Throat pain	General status
(Onset, site, nature, aggravating and relieving factors, migration of pain)	Oral cavity/oropharynx/hypopharynx (presence of foreign body, ulcer, swelling, saliva pooling)
Dysphagia	Neck for swelling/ subcutaneous emphysema
Type of foreign body	Trachea rock
Chest pain	Swallow test
Shortness of breath	
Haemoptysis	
Fever	
Last meal/drink	
Medical problems	

triad of mid-thoracic pain, sentinel arterial haemorrhage and exsanguination after a symptom-free period (Chiari's triad).

Physical examination

The tonsils, tongue base, and vallecular and piriform fossa are some of the common locations in which foreign bodies are commonly embedded. In an outpatient clinic setting, when we have to examine a patient with a suspected foreign body, we can begin with a simple examination of the oral cavity using a tongue depressor and a headlight. That allows us to have a good visualisation of the tonsillar fossa and the use of a headlight also enables us to use the other hand to hold on to a Tilley forcep or a West forcep to remove any foreign body that is embedded in the tonsils.

In the past, before flexible endoscopy was invented, we used the laryngeal mirror to perform an indirect laryngoscopy for removal of any foreign body embedded in the tongue base and vallecular. However, for the past decade, flexible endoscopy with grasping forceps has surpassed the laryngeal mirror as the primary modality used in our clinics for foreign body removal.

Besides looking out for the foreign body, other findings that can be significant would be presence of swelling and ulceration. These may represent the presence of a deeply embedded foreign body within the soft tissue resulting in the swelling and ulceration. The presence of saliva pooling may also suggest impaired swallowing as a result of a foreign body in the oesophagus.

Beyond the cricopharyngeus, a foreign body embedded in the

oesophagus will require an otolaryngologist review. The removal usually will be performed under general anaesthesia using a rigid oesophagoscope.

Tracheal rock refers to the moving of the trachea/larynx in a side-to-side motion. A positive trachea rock refers to the presence of pain when the motion is performed and it may suggest the presence of a foreign body.

A swallowing test is performed by asking the patient to take a few sips of water. The presence of pain when swallowing water also suggests the possibility of an embedded foreign body.

The presence of subcutaneous emphysema on palpation of the neck may also be a sign of a perforated oesophagus with free air tracking in the subcutaneous plane.

FOREIGN BODIES IN CHILDREN

As I mentioned earlier, children form the other group of patients we commonly encounter in the clinic for foreign body management. The majority are normal children, but a small group may be intellectually challenged children who may present to the clinic recurrently for foreign body insertion.

Boys are affected more commonly than girls. The high incidence of foreign body aspiration/ingestion in children results from absence of full posterior dentition for efficient mastication, their tendency to explore the world with their mouths, and the fact that their neuromuscular mechanisms

for swallowing and airway protection may be still immature.

The site of the foreign body can be in the nose, throat, ear and airway. We shall look at these individually.

Nasal foreign body

A nasal foreign body should be considered when managing a child with persistent unilateral foul-smelling nasal discharge. The common foreign bodies we have seen and removed from a child are food wrappers, stickers, plastic toy parts, beads, foods such as green beans/red beans, and small household items, including button batteries. The history is usually obtained from the caregiver. The child may have been seen inserting a foreign body into the nasal cavity or it may be the caregiver who noticed some missing parts on the toys the child was playing with.

The foreign body tends to be located on the floor of the nasal cavity below the inferior turbinate, between the inferior turbinate and the septum, or in the upper nasal fossa anterior to the middle turbinate.

Most of the nasal foreign bodies can be removed in the outpatient clinic setting. Depending on the age and the weight of the child, a local anaesthesia spray such as lignocaine spray can be used to provide analgesia. We commonly remove the foreign body under direct visualisation using a headlight and a pair of Tilley forceps, curved hooks or suction catheters.

We do not suggest sedating the child in the outpatient setting as that can reduce the gag and cough reflexes. If, during the attempt to remove the foreign body, the child struggles and the foreign body is pushed into the pharyngeal and laryngeal area, the reduced gag and cough reflexes can potentiate an airway problem.

A button battery must be removed immediately. If delayed, it can result in necrosis of the surrounding tissue, resulting in septum perforation. At times, nasal irrigation post button battery removal may be necessary. This group of children has to be followed up closely to monitor for complications that can still occur post removal.

Ear foreign body

In children, a foreign body in the ear can be asymptomatic and is often an incidental finding. Occasionally, they may complain of ear pain, discharge or hearing problems. The common foreign bodies we have removed from the child's ear include beads, beans, food, insects, plasticine, play dough, erasers, parts of toys, stickers, and occasionally crayons, papers and pencil lead.

The age, the location, the type of foreign body and the appropriate equipment, together with a skilled physician and a cooperative child, are the key to a successful foreign body removal.

In the outpatient clinic setting, I would recommend taking a

look using an otoscope. If the foreign body is not too impacted and deep in the ear canal, the removal can be attempted in a cooperative child using a headlight paired with an alligator forceps, cup forceps, right-angle hook or a jobson horn. A foreign body that is easily graspable such as paper, stickers and erasers has a higher chance of removal whereas one that has smooth edges and is difficult to grasp, such as beans and beads, may be difficult to remove if it is impacted in the ear canal.

For children with insects in the ear canal, olive oil eardrops or xylocaine spray can be used to kill the insects prior to removal to reduce trauma to the ear canal. However, xylocaine spray should not be used when the tympanic membrane is perforated.

The first attempt is usually the most important in a child. Beyond that, the child's cooperation usually decreases and it gets more difficult with each repeat attempt. An otolaryngology referral should be made when the child is not cooperative and removal of the foreign body under sedation or general anaesthesia may be required. Other indications for referrals would include patients with suspected trauma to the ear canal and tympanic membrane, deeply embedded foreign body, and difficult-to-remove foreign body with previous failed attempts. In such cases, the use of a microscope is necessary for the removal of the foreign body as well as to examine the tympanic membrane.

After removing the foreign body, an otic antibiotic eardrop can be used if there is significant trauma to the ear canal or if there appears to be otitis externa as suggested by the presence of an oedematous and erythematous ear canal. If tympanic membrane perforation is noted, a referral to an otolaryngologist for further review and hearing test may be required.

Airway foreign body

An airway foreign body in a child is an emergency. The child with a complete airway obstruction may present to the clinic with airway distress, aphonia and inability to cough. On the other hand, a child with partial airway obstruction may exhibit symptoms such as cough, gag, stridor or wheeze. The caregiver usually gives the history of a child who has experienced some choking or gagging when the object was inhaled. Recognising complete obstruction is important. First aid manoeuvres should not be attempted in a child with incomplete obstruction as that can convert an incomplete obstruction into a complete obstruction by pushing the foreign body into the laryngeal inlet or moving the foreign body from a distal airway into the main trachea. The child should be referred to the emergency department and a paediatric otolaryngologist review will be necessary. A rigid bronchoscopy is usually performed by the paediatric otolaryngologist with a paediatric anaesthetist assisting in providing anaesthesia during the foreign body removal.

Occasionally, the initial symptoms may subside. The foreign

body may be lodged in a smaller branch of the bronchus and the child may present with a chronic cough that doesn't improve or a recurrent chest infection. It is not common but such cases have been picked up by the paediatric respiratory medicine doctors who have found the foreign body during flexible bronchoscopy when evaluating a child with a recurrent chest infection and chronic cough.

REFERENCES

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LEARNING POINTS

- Simple foreign bodies can usually be identified and removed easily in the outpatient family physician clinic setting using appropriate instruments.
 - Since an embedded fishbone in the oesophagus can lead to complications such as mediastinitis or aorto-oesophageal fistula, prompt removal is always advised.
 - Button battery in the nose is an emergency and requires emergency surgery for removal.
 - Airway foreign body in a child requires emergency referral to a paediatric otolaryngologist as an impeding airway is at stake.
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