IRISH ASSOCIATION FOR EMERGENCY MEDICINE

IAEM Clinical Guideline

Foreign Bodies: The Emergency Department Management of Inhaled and Inserted Objects in Children

Version 1.2

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DISCLAIMER

IAEM recognises that patients, their situations, Emergency Departments and staff all vary. These guide- lines cannot cover all clinical scenarios. The ultimate responsibility for the interpretation and application of these guidelines, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.

Revision History

Date	Version	Section	Summary of changes	Author
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GLOSSARY OF TERMS

APLS	Advanced Paediatric Life Support
ED	Emergency Department
ENT	Ear, Nose and Throat
FB	Foreign body
SpR	Specialist registrar

Foreign Bodies: The Emergency Department Management of Inhaled and Inserted Objects in Children

INTRODUCTION

Foreign bodies are a common cause of presentation to the paediatric Emergency Department (ED). Small objects may be aspirated or inserted into the ear or nose. As this is commonest in younger children, the history may be vague and sometimes the cause for presentation is simply parental suspicion which should always be taken seriously.

PARAMETERS

Target audience	Health-care professionals working in the ED.
Patient population	Children aged 6 months to 15 years inclusive, who present to the ED after inhaling a FB (foreign body) or inserting a FB into their ear or nose.
Exclusion criteria	It does not deal with children below the age of 6 month nor does it deal with patients in respiratory/cardiac arrest after a choking episode.

AIMS

To provide a guideline to assist in the ED management of children with ear, nose or upper airway foreign bodies

INHALED FOREIGN BODY

Presentation

- History may be unclear as the event may have been unwitnessed. The symptoms may have started while playing, particularly if the child was unsupervised.
- Children may present with coughing, choking, wheeze, drooling, chest pain or sensation of a foreign body "stuck in the throat". After the initial event they may be asymptomatic and may remain undiagnosed, presenting at a later date with recurrent pneumonia.
- Impaction of a FB in the larynx can result in total airway obstruction causing rapid progression to unconsciousness and respiratory arrest.
  - This should always be considered in the differential for any child brought to ED in cardiorespiratory arrest who cannot be ventilated.
- Impaction of a FB in the larynx or main bronchus resulting in a partial obstruction is a sudden catastrophic event presenting with coughing, choking and stridor.

Examination

May be normal OR

- Unilateral wheeze
- Unilateral decreased breath sounds
- Asymmetrical chest movement
- Tracheal deviation

Investigations

1. Chest radiograph

- Generally wood, plastic and organic FBs are not visible on radiograph, while stone and metal FBs are visible. Glass may or may not be visible depending on the object.
- In addition to certain FBs, a chest radiograph may show:
  - A unilateral hyper-lucent lung in the early stages.
  - Post-obstructive lobar or segmental infiltrates or collapse later on.
  - An expiration film can help accentuate air trapping distal to the FB. In the case of young children with suspected air trapping but where expiratory films are difficult to perform, a lateral decubitus film can take its place.

Patients with negative radiograph but a strong history suggestive of foreign body inhalation should be referred to ENT (ear, nose and throat) for rigid bronchoscopy.

2. Soft tissue neck radiograph

- Some FBs will be impacted above the thoracic inlet and may be too superior to be seen on chest radiograph.

Management

1. Total airway obstruction

- Follow APLS (Advanced paediatric life support) Guidance
- Inspect the oropharynx, if the FB can be seen remove with magil's forceps under direct visualisation - senior ED staff only. SpR (specialist registrar) / Consultant should be present and ENT informed as soon as the problem is identified.

2. Partial airway obstruction and FB impacted below the level of the larynx

- Allow the child to remain upright in a comfortable position with minimal intervention and an emphasis on keeping calm.
- Imaging should not delay definitive treatment in a life threatening aspiration.
- Refer all suspected FBs to ENT as per local procedures for removal by laryngoscopy and/or rigid bronchoscopy.
- If ENT suspect there is a FB beyond the level of the primary bronchi (right and left main bronchi) which cannot be reached with rigid bronchoscopy, please refer to the respiratory/ paediatric respiratory consultant on call as per local protocols for removal by flexible bronchoscopy.
- All children who have had a FB removed from their lower airways should have a respiratory review prior to discharge given the possibility of short-term and long-term sequelae occurring in some children who have experienced a FB inhalation. In regional units without paediatric respiratory services, this review and follow up may be best facilitated through general paediatric or adult respiratory services depending on age of child and local protocols.

FOREIGN BODY IN THE EAR

Presentation

- History of recent witnessed or reported FB insertion or may simply present with symptoms of a FB. Symptoms include ear pain, itch, reduced hearing or a feeling of fullness in the ear.
- Examination:
    - The FB is usually seen by direct visualisation with otoscopy.
    - Sometimes an area of local inflammation can be seen around the FB.
    - It is important to note whether the tympanic membrane is visualised and if it is perforated or not as this determines the management plan.

Management

- Foreign bodies should only be removed in ED by experienced medical staff. Complications include canal abrasion, laceration, bleeding, tympanic membrane perforation and hearing loss.
- It is important that the child is held securely prior to any attempted removal of FB. Techniques include the “Superman Pillowcase” technique (see below for instructions) or wrapping the child in a blanket. Lighting is also very important and a head torch can be useful.
- Procedural sedation may be required.

- A number of different instruments can be used to remove the FB from the ear canal. These include forceps, cerumen loop, suction catheter and katz extractor.

The "Superman Pillowcase" Technique: Place the child's arms behind their body; carefully pulla pillow case up over their arms so that it sits against their back; lay the child down so that their arms are by their sides and they are lying on the pillow case

Indications for Urgent Referral to ENT

- Perforated tympanic membrane.
- FB touching the tympanic membrane.
- Non-graspable or tightly wedged FB.
- Sharp FB.
- ED attempt to remove the FB unsuccessful.

NASAL FOREIGN BODY

Presentation

- Symptoms include pain, unilateral foul smelling nasal discharge and epistaxis.
- FB should be visible, often at level of inferior turbinate.

Management

- The “mother’s kiss” is a safe first line treatment to attempt removal of a foreign body.
    - The parent occludes the unaffected nostril, covers the child’s open mouth with their mouth and blows until they feel the resistance of the glottis.
    - When this resistance is met the parent gives a puff of air which enters the nasopharynx and hopefully dislodges the foreign body.
- A similar technique can be used in older children by occluding one nostril and asking them to blow their nose.
- If this is unsuccessful and the object is visible, ED staff may attempt to remove the object.

See above for recommended holding and instruments.

Indications for Urgent Referral to ENT

- Unsuccessful attempt at removal in ED.
- Septum or bony destruction from chronic foreign body.
- Button batteries - should be removed immediately due to the risk of necrosis of surrounding tissues.
- Bleeding disorder.