

Metallic Foreign Body Ingestion in Children

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Foreign body ingestion is encountered most commonly in children especially among toddlers. Coin ingestion is the commonest foreign body encountered by pediatricians in day to day practice. Other metallic objects ingestion witnessed by parents includes hairpins, sharp or pointed objects (pins, blades, screw), button battery, long objects like disc battery and jewellery items. Most of the ingested foreign bodies pass through the gastrointestinal tract spontaneously and uneventfully. However, neurologically impaired children with recurrent foreign body ingestion, children with congenital malformations of gastrointestinal tract, prior GI surgery and ingestion of sharp pointed objects or button battery are at higher risk of developing symptoms and complications. Esophagus is a common site for impaction of foreign bodies especially in infants and younger children. Child may present with difficulty in feeding, chest pain, dysphagia or drooling of saliva in case of near complete luminal obstruction. Button batteries impacted in esophagus even for a short time may lead to the severe ulcerations and injury to the surrounding structures including trachea, laryngeal nerves, aorta and other vascular structures or perforation. Similarly, Sharp and pointed objects may lead to ulcerations or perforation of the esophagus or stomach and beyond. Foreign bodies in the stomach usually do not cause harm and pass through the pyloric opening spontaneously except in infants or ingestion of large or sharp objects which may manifest as abdominal pain, vomiting, hematemesis or gastric outlet obstruction. Sometimes, Ileo-caecal valve may be the site of impaction of foreign body once it has crossed the pylorus.

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Metallic foreign bodies are easily picked up on routine x-ray films. An ingested coin or button battery may be seen in esophagus as a round image. However, the later is identified by the presence of “Double halo” sign in AP view and “Step-off” sign in the lateral view of x-ray. Endoscopic removal of ingested foreign body is indicated in certain scenarios as depicted in figure 1. Based on the time from ingestion to removal of foreign bodies from GI tract, it is classified as emergent (within 2 hours), urgent (within 24 hours), elective (>24hours). All symptomatic esophageal foreign bodies require emergent or urgent removal depending on the nature of foreign body ingested. It is always preferred to secure airways by endotracheal intubation before proceeding for removal of ingested foreign body in children. In children with button battery impacted in esophagus for a long duration, endoscopic removal may be attempted in OT or Cath lab involving cardiothoracic vascular surgeon, ENT surgeon along with radiologist to tackle the anticipated complications. Stomach button batteries of >20mm size in children <5 years of age may not pass spontaneously across the pylorus and should be observed with serial x-rays and if not passed then to be removed endoscopically. For sharp objects, the best grasping tools include retrieval forceps, retrieval net, and polypectomy snare. In esophagus, if sharp end of the object is facing cephalad, the safest approach is to push the object into the stomach with forceps and then rotate the sharp end caudally followed by

endoscopic removal. Certain protective devices like a foreign body protector hood or transparent distal caps are useful in removing sharp objects from the stomach. Once a sharp object has crossed the pylorus and 1st part of duodenum, it becomes almost inaccessible to the endoscopic retrieval. Although controversy exists on wait and watch policy for sharp foreign bodies in the intestine, once symptomatic or failure to pass spontaneously beyond 3-4 days may be considered for surgical removal. A flow-chart of management of metallic foreign body in children is depicted in figure 1.

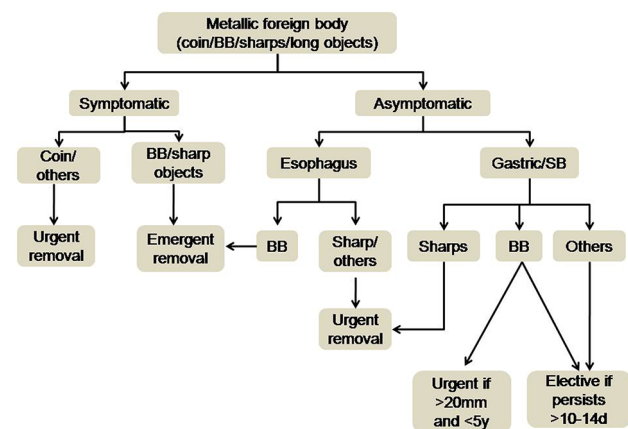


Figure 1: Management of Metallic Foreign Body in children

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