Lodged Esophageal Coin Treatment Guidelines

Background

Coins are the most common non-organic foreign bodies ingested by children. Coins which lodge in the oropharynx, airway or esophagus can cause serious complications and must be removed from these sites emergently. There are at least four methods used to manage coins lodged in the esophagus: esophagoscopy with forceps retrieval, esophageal bougienage coin advancement into the stomach, Foley catheter retrieval and expectant monitoring for spontaneous coin passage into the stomach. The criteria for selecting esophageal bougienage are given below.

Criteria for Esophageal bougienage

1. Single coin ingested.
2. Coin radiographically located in the esophagus.
3. Witnessed ingestion of <24 hours duration.
4. No prior history of esophageal foreign body, esophageal disease (GE reflux, esophagitis, stricture or hiatal hernia) or esophageal surgery.
5. No known gastrointestinal tract anomalies or surgery that would prevent the spontaneous passage of the coin from the stomach and through the intestinal tract.
6. No acute respiratory distress (tachypnea, stridor or wheezing).
7. Physician performing procedure has received in-service education from physician experienced in bougienage technique for coin advancement.

Esophageal bougie size per patient age

Patient age	Bougie size
1-<2 yrs	28F
2-<3 yrs	32F
3-<4 yrs	36F
4-<5 yrs	38F
5 yrs and >	40F

Procedure

1. Informed consent is recommended.

2. Estimate length of bougie necessary to reach the stomach (nares to subxiphoid distance) and mark this length on the bougie with circumferential tape.
3. Patient seated in upright position, arms wrapped at the side by a cloth sheet and head and arms restrained from behind by assistant personnel.
4. Conscious sedation for an overly anxious older child may be considered, but is usually not necessary due to the very brief time needed to perform the procedure.
5. Tongue blade induced gag. Stack and tape 3 or 4 tongue blades together to serve as bite block to prevent the patient biting the bougie.
6. Gentle but firm insertion and advancement of bougie into oropharynx (tactile appreciation of the bougie tip hitting the coin is not experienced by the physician), advance to marked depth into stomach (one pass) and withdraw bougie.
7. Repeat radiograph of chest and upper abdomen to assess for coin advancement into stomach.
8. Discharge instructions to monitor for coin passage in stool. Return or immediate evaluation if abdominal pain, dysphagia, vomiting, hematemesis, hematochezia, chest pain or shortness of breath develops.

Potential Complications

1. Transient patient discomfort, gagging, retching, vomiting and/or respiratory distress during procedure.
2. Esophageal perforation (never reported).
3. Gastric perforation (never reported).
4. Failure to advance coin from esophagus into stomach (can occur if bougie is too small.
5. Bowel obstruction due to coin passage failure (never reported).

Reference

1. Conners GP. A Literature-based Comparison of Three Methods of Pediatric Coin Removal. Ped Emerg Care 1997; 13: 154-157.
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4. Conners GP. Esophageal Coin Ingestion: Going Low Tech. Ann Emerg Med. 2008;51:373-374.
5. Arms JL, Mackenberg-Mohn MD, Bowen MV, et al. Safety and Efficacy of a Protocol Using bougienage of Endoscopy for the Management of Coins Acutely Lodged in the Esophagus: A Large Case Series. Ann Emerg Med. 2008;51:367-372.