Abstract

Objectives: To expand the differential diagnosis of dysphagia in pediatric/mentally disabled patients to prevent delay in diagnosis of esophageal foreign bodies.

Study Design: Foreign body ingestion is a common problem in the pediatric/mentally compromised population including items such as coins, safety pins, batteries and dentures. Many foreign body ingestions are asymptomatic. Radiologic imaging is the primary diagnostic modality. We report a case of a 22-year-old male with infantile autism/seizure disorder with a one-week history of sepsis (fever and leucocytosis), abdominal pain, stool excrement with plastic debris, and nausea and vomiting with dehydration.

Methods: Esophagastroduodenoscopy demonstrated a completely occluding foreign body in the cricopharyngeal region not retrievable by snare net or balloon catheter. Rigid esophagoscope revealed fetid spongilla and diaper remnants, covering a metallic nightstand door knob 2.5 x 3.5 cm, removed by forceps rotation and retrograde pulsson. (Figure 1,2)

Results: The patient sustained no postoperative esophageal complications. Retrospectively, delay in diagnosis included inadequate outpatient history and misreading of the admission chest x-ray, clearly demonstrating an unusual radio-opaque cervical foreign body.

Conclusion: A previous case report described an ingested drawer knob lodged in the pharynx/larynx but no prior esophageal reports. Foreign body ingestion should be on the differential diagnostic list for pediatric and mentally/verbally compromised patients presenting with dysphagia, odynophagia, drooling, and gastrointestinal symptoms.

Introduction

• Foreign body ingestion is common in the pediatric population but rare in the adult population
• Primary symptoms of foreign body ingestion include dysphagia, drooling, and vomiting
• Radiologic imaging is the primary diagnostic modality

Case Description

• 22-year old African-American male presented to the hospital with a 3 day history of vomiting, abdominal pain, malaise, drooling and poor oral intake
• Past medical history included autism and seizure disorder
• History was obtained from the patient’s father because the patient was unable to verbally communicate using words secondary to his severe autism
• Physical exam revealed a supple neck, no lymphadenopathy, clear lung fields, and diffuse mild abdominal tenderness without any guarding, distention or masses palpated

Investigations and Clinical Course

• Initial vital signs revealed tachycardia (150 bpm) without fever (36.7°C) and initial labs revealed an increased WBC count (23.1) with neutrophilia (88%)
• Chest x-ray revealed an opacity near the trachea, but there was no comment regarding this finding in the radiology report. (Figure 3) Abdominal x-ray and CT abdomen and pelvis with contrast did not reveal any signs of an acute process or any intestinal obstruction
• Patient was subsequently admitted to the MICU for a workup of a suspected infection
• Repeat chest x-ray and CT head (Figure 4) were obtained which demonstrated a radioopaque object in the esophagus, but not documented by radiology or the MICU staff
• EGD revealed a foreign body in the upper esophageal region that was not able to be removed with forces
• In the OR, a Dero laryngoscope was inserted which revealed a large amount of foreign body material in the posterior oropharynx and hypopharynx which was removed with forceps. After removal, the cricopharyngeus muscle was identified and a shiny metallic object was located in the esophagus
• A rigid esophagoscope was inserted and used to visualize the metallic object. Multiple attempts at removal with grasping forceps were unsuccessful due to the smoothness and size of the object
• The object was palpated in the neck and then pulled into the oropharynx using retrograde pressure where it was removed with serrated forceps
• The object removed was a metallic drawer knob which measured 2.5 x 3.5 cm (Figure 2)
• Following removal of the metallic knob, the rest of the esophagus and pharynx were inspected and no foreign bodies were visualized
• There was minimal bleeding visualized within the esophagus and no crepitus was palpated in the neck
• The patient was then taken post-operatively to the ICU and placed on TPN, which was advanced to oral intake after 4 days, which he tolerated well
• Following discharge, the patient was seen in clinic four weeks post-operatively and was doing well

Discussion

• Foreign body ingestion is a common problem among children worldwide
• Coins are the most commonly reported foreign body ingestions by children
• In patients with a history of mental disorder, symptoms of foreign body ingestion such as difficulty swallowing, excessive salivation, poor oral intake, stridor, abdominal pain, and peritonitis should alert the physician to the possibility of foreign body ingestion
• In one study, 50% of foreign body ingestion cases were asymptomatic and physical exam was normal in 89% of cases
• Foreign bodies not identified within the first 24 hours have a 1.88 relative risk increase in complications (abrasion, laceration, perforation or strictureing of the esophagus) and after 72 hours that risk increases to 6.88
• There was only one other case study in our literature search demonstrating ingestion of a metallic knob, and this was lodged in the pharynx/larynx.
• Numerous techniques exist to remove foreign bodies in the pediatric population, including rigid esophagoscopy with general anesthesia and forceps, balloon extraction, and advancement with bouganje
• Balloon extraction is a relatively safe and effective procedure with an 83-95% success rate
• Morrow et al found no complications from balloon extraction of foreign body ingestion in place for up to 7 days
• During complicated cases in which there is suspected or possible esophageal injury, concerns over tracheal compression, or radiolucent foreign bodies, rigid esophagoscopy is preferred to visualize the foreign body and the esophageal mucosa
• Retrograde pressure on the neck can help dislodge a large foreign body when conventional methods fail in retrieval

Conclusion

• Foreign body ingestion should be on the differential diagnostic list for pediatric and mentally/verbally compromised patients presenting with dysphagia, odynophagia, drooling and gastrointestinal symptoms
• Numerous techniques exist to remove foreign bodies in the pediatric population including rigid esophagoscopy with general anesthesia and forceps, balloon extraction, and advancement with bouganje
• In foreign bodies that have been lodged less than 7 days, balloon extraction is an acceptable method of removal
• External retroplulsion should be considered in combination with rigid esophagoscopy to remove large, irregularly shaped objects unable to be retrieved with forceps alone

Images

Figure 1 – Diaper Debris and Sponge
Figure 2 – Foreign Body
Figure 3 – Chest X-ray Red arrow indicates the foreign body.
Figure 4 – CT Head (Recon Image) Yellow arrow indicates foreign body.

References