Topics in Pediatric Gastroenterology: Review Questions

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QUESTIONS

Choose the single best answer for each question.

Questions 1 and 2 refer to the following case.
A 1-day-old, full-term neonate experiences coughing, frothing of the mouth, and cyanosis during attempts at breastfeeding. Because of concern about aspiration, an attempt is made to pass a nasogastric tube, but the tube meets resistance and cannot be advanced adequately.

1. **What is the most likely diagnosis in this patient?**
   (A) Disordered pharyngeal function with abnormal swallowing
   (B) Esophageal atresia
   (C) Gastroesophageal reflux disease (GERD)
   (D) Milk allergy
   (E) Zenker's diverticulum

2. **How should this patient be treated?**
   (A) Endoscopic reattachment of the proximal and distal esophagus
   (B) Insertion of a percutaneous endoscopic gastrostomy tube for feeding and hydration
   (C) Placement of an endobronchial stent to prevent aspiration
   (D) Surgery to correct the anatomic defects
   (E) Total parenteral nutrition

3. **A healthy 3-year-old boy reports to his mother that he accidentally swallowed a small plastic toy animal (from a farm playset) and is brought to the emergency department for evaluation. The mother recalls that the other toys in the playset are all 1 to 2 cm in length and have no sharp edges. On examination, the child appears to be in no distress and is playing in the examination room with his sister. His vital signs are normal, and he is requesting something to eat. What is the next best course of action?**
   (A) Barium esophagram
   (B) Observation
   (C) Obtain a chest and abdominal radiograph series
   (D) Perform upper endoscopy to remove the toy
   (E) Surgical consultation as the object could cause a bowel obstruction

4. **A 10-year-old boy presents for evaluation of a food bolus impaction. The patient has had 2 similar episodes over the past year. His past medical history is significant for asthma, but he is not taking medications at this time. In the past, large meat boluses were extracted endoscopically, but no overt esophageal abnormalities were noted. The patient is unable to control his secretions and undergoes repeat endoscopy. No overt obstruction is seen, but some white exudates are seen in the esophagus. The food bolus is successfully removed. What is the most likely underlying diagnosis in this patient?**
   (A) Behavior disorder
   (B) Eosinophilic esophagitis (EE)
   (C) Esophageal Shatzki's ring
   (D) Nutcracker esophagus
   (E) Undiagnosed GERD

5. **A 7-year-old boy presents to the emergency department with clinical evidence of a small bowel obstruction. This is his third such presentation in the past year. Previously, his symptoms had resolved with nasogastric suction and bowel rest, but the child is now unresponsive to these measures. On examination, the patient has some pigmented spots on his lips and gums, a normal cardiopulmonary examination, and a grossly distended abdomen with high-pitched bowel sounds. The patient is taken to laparotomy and found to have a 5-cm obstructing polyp, which is found to be hamartomatous on**

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pathologic analysis. What is this patient's underlying diagnosis?

(A) Celiac sprue
(B) Familial adenomatous polyposis syndrome
(C) Hereditary nonpolyposis colon cancer syndrome
(D) Peutz-Jeghers syndrome (PJS)
(E) Sporadic polyp causing bowel obstruction

ANSWERS AND EXPLANATIONS

1. **(B) Esophageal atresia.** This patient has esophageal atresia, a common esophageal congenital malformation in which the proximal esophagus ends in a blind pouch and is not in continuity with the distal esophagus and stomach. Over 90% of patients with esophageal atresia have an associated tracheoesophageal fistula. The patient is experiencing episodes of aspiration when attempting to swallow. A Zenker's diverticulum would be very unlikely in a neonate. Neonatal GERD is possible but typically would not be associated with cyanosis. Disordered pharyngeal function is highly unusual in a neonate, and milk allergy could mimic some of these symptoms but would not manifest this soon after birth.
2. **(D) Surgery to correct the anatomic defects.** The patient requires surgery to close the tracheoesophageal fistula and to anastomose the proximal and distal esophagus. If the gap between the esophageal segments is too long, a segment of small or large intestine can be interposed to restore patency. Endoscopic reattachment of the proximal and distal esophagus is not technically possible. An endobronchial stent might help with aspiration but would not allow oral feeding. Total parenteral nutrition would not reduce the risk of aspiration and is suboptimal compared with enteral feeding. A percutaneous endoscopic gastrostomy tube could be considered if the baby was premature or had other complex medical issues, but these factors are absent in this patient and it is best to proceed directly to surgery.
3. **(B) Observation.** Small children frequently ingest foreign bodies, most commonly coins and small toys. In an asymptomatic child who has ingested a small object without sharp projections or risk of systemic toxicity, observation is warranted. Parents should evaluate bowel movements for the presence of the object to ensure passage. Routine radiography may not identify plastic objects. Endoscopy should be reserved for the removal of sharp or potentially dangerous objects (eg, batteries) or for patients in distress or who cannot control their secretions, suggesting obstruction. Surgical consultation should be obtained if there is concern about perforation or if a dangerous object cannot be removed endoscopically. Barium should be avoided as it can coat the esophagus and complicate endoscopy if needed.
4. **(B) EE.** EE is an inflammatory disorder that involves an eosinophilic infiltrate in the esophagus. This condition is associated with atopic illnesses, such as asthma, and may represent an allergic process. On esophageal biopsies, patients have more than 20 eosinophils per high power field. Food impaction and dysphagia are common in these patients, and endoscopy can reveal a ringed esophagus, patchy white exudates, and strictures or can be normal. Treatment of EE involves oral or inhaled corticosteroids, and most patients respond to therapy. A Shatzki ring, if present, would be easily detected on endoscopy. Nutcracker esophagus is a disorder of esophageal motility and is rarely seen in pediatric patients. GERD is not associated with food impactions without associated peptic strictures. Behavior disorders can be seen in patients with EE, but this would not explain recurrent food impaction.
5. **(D) PJS.** PJS, an autosomal dominant inherited disorder, is characterized by hyperpigmentation of the lips and buccal mucosa and is associated with the development of hamartomatous polyps in the gastrointestinal tract, most notably in the small intestine. The polyps form a starting point for intussusception and thus obstruction. Sporadic polyps of this size would be extremely rare and would be unlikely to be hamartomatous. Hereditary nonpolyposis colon cancer syndrome is a condition whereby individuals are at increased risk for a variety of malignancies (most notably colon cancer). Celiac sprue (also known as gluten-sensitive enteropathy) is a malabsorptive disorder and is not associated with hamartomatous polyps. Familial adenomatous polyposis syndrome is a disorder characterized by innumerable large intestinal polyps that, if not treated by colectomy, universally leads to colorectal cancer.

PEDIATRIC GASTROENTEROLOGY

A current list of certification and recertification exam dates and registration information is maintained on the American Board of Pediatrics Web site, at http://www.abp.org.