CHAPTER 33

Gastrointestinal Problems

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Priority Concepts

Elimination; Nutrition

I. Vomiting

A. Description

1.  The major concerns when a child is vomiting are the risk of dehydration, the loss of fluid and electrolytes, and the development of metabolic alkalosis.
2. Additional concerns include aspiration and the development of atelectasis or pneumonia.
3. Causes of vomiting include acute infectious diseases, increased intracranial pressure, toxic ingestions, food intolerance, mechanical obstruction of the gastrointestinal tract, metabolic disorders, and psychogenic disorders.

B. Assessment

1. Character of vomitus
2.  Signs of aspiration
3. Presence of pain and abdominal cramping
4. Signs of dehydration and fluid and electrolyte imbalances
5. Signs of metabolic alkalosis

C.  Interventions

1. Maintain a patent airway.
2. Position the child on the side to prevent aspiration.
3. Monitor the character, amount, and frequency of vomiting.
4. Assess the force of the vomiting; projectile vomiting may indicate pyloric **stenosis** or increased intracranial pressure.
5. Monitor strict intake and output.
6. Monitor for signs and symptoms of dehydration, such

as a sunken fontanel (age-appropriate), nonelastic skin turgor, dry mucous membranes, decreased tear production, vital sign changes, and oliguria.

7. Monitor electrolyte levels.
8. Provide oral rehydration therapy as tolerated and as prescribed; begin feeding slowly, with small amounts of fluid at frequent intervals.
9. Administer antiemetics as prescribed.
10. Assess for abdominal pain or diarrhea.
11. Advise the parents to inform the primary health care provider (PHCP) if signs of dehydration, blood in the vomitus, forceful vomiting, or abdominal pain are present.

II. Diarrhea

A. Description

1.  Acute diarrhea is a cause of dehydration, particularly in children younger than 5 years.
2. Causes of acute diarrhea include acute infectious disorders of the gastrointestinal tract, antibiotic therapy, rotavirus, and parasitic infestation.
3. Causes of chronic diarrhea include malabsorption syndromes, inflammatory bowel disease, immunodeficiencies, food intolerances, and nonspecific factors.
4. Rotavirus is a cause of serious gastroenteritis and is a nosocomial (hospital-acquired) pathogen that is most severe in children 3 to 24 months old; children younger than 3 months have some protection because of maternally acquired antibodies.

 *Many conditions can cause vomiting or diarrhea, such as but not limited to viral gastroenteritis, group B hemolytic streptococcal pharyngitis, food allergies, and food-borne illnesses.*

B. Assessment

1. Character of stools
2. Presence of pain and abdominal cramping
3. Signs of dehydration and fluid and electrolyte imbalances
4. Signs of metabolic acidosis

C. Interventions

1. Monitor character, amount, and frequency of diarrhea.
2.  Provide enteric isolation as required; instruct the parents in effective handwashing technique (children should be taught this technique also).

3. Monitor skin integrity.
4. Monitor strict intake and output.
5. Monitor electrolyte levels.
6. Monitor for signs and symptoms of dehydration.
7. For mild to moderate dehydration, provide oral rehydration therapy with Pedialyte or a similar rehydration solution as prescribed; avoid carbonated beverages because they are gas-producing, and fluids that contain high amounts of sugar, such as apple juice.
8. For severe dehydration, maintain NPO (nothing by mouth) status to place the bowel at rest and provide fluid and electrolyte replacement by the intravenous (IV) route as prescribed; if potassium is prescribed for IV administration, ensure that the child has voided before administering and has adequate renal function.
9. Reintroduce a normal diet when rehydration is achieved.

The major concerns when a child is having diarrhea are the risk of dehydration, the loss of fluid and electrolytes, and the development of metabolic acidosis. Orthostatic vital signs are helpful in assessing hydration status.

III. Cleft Lip and Cleft Palate

A. Description

1. Cleft lip and cleft palate are congenital anomalies that occur as a result of failure of soft tissue or bony structure to fuse during embryonic development.
2. The defects involve abnormal openings in the lip and palate that may occur unilaterally or bilaterally and are readily apparent at birth.
3. Causes include **hereditary** and environmental factors —exposure to radiation or rubella virus, chromosome abnormalities, family history, maternal smoking, and teratogenic factors such as medications taken during pregnancy.
4. Prenatal dietary supplementation of folic acid is important to decrease the risk of cleft lip and palate.
5. Closure of a cleft lip defect precedes closure of the cleft palate and is usually performed by age 3 to 6 months.
6. Cleft palate repair is usually performed around 1 year of age, following the successful repair of cleft lip if present, and to allow for the palatal changes that occur with normal **growth**; a cleft palate is closed as early as possible to facilitate speech development.
7. A child with cleft palate is at risk for developing frequent otitis media; this can result in hearing loss.

8. An interprofessional team approach, including audiologists, orthodontists, plastic surgeons, and occupational and speech therapists, is taken to address the many needs of the child.

B. Assessment (Fig. 33-1)

1. Cleft lip can range from a slight notch to a complete separation from the floor of the nose.
2. Cleft palate can include nasal distortion, midline or bilateral cleft, and variable extension from the uvula and soft and hard palate.

C. Interventions

1.  Assess the ability to suck, swallow, handle normal secretions, and breathe without distress.
2. Assess fluid and calorie intake daily.
3. Monitor daily weight.
4. Modify feeding techniques; plan to use specialized feeding techniques, obturators, and special nipples and feeders.
5.  Hold the infant in an upright position and direct the formula to the side and back of the mouth to prevent aspiration.
6. Feed small amounts gradually and burp frequently.
7.  Keep suction equipment and a bulb syringe at the bedside.
8. Teach the parents special feeding or suctioning techniques.
9. Teach the parents the *ESSR* method of feeding —*e*nlarge the nipple, *s*timulate the sucking reflex, *s*wallow, *r*est to allow the infant to finish swallowing what has been placed in the mouth.
10. Encourage parents to express their feelings about the disorder.
11. Encourage parental bonding with the infant, including holding the infant and calling the infant by name.

D. Postoperative interventions

1. Cleft lip repair
   a. Provide lip protection; a metal appliance or adhesive strips may be taped securely to the cheeks to prevent trauma to the suture line.
   b.  Avoid positioning the infant on the side of the repair or in the prone position because these positions can

cause rubbing of the surgical site on the mattress (position on the back upright and position to prevent airway obstruction by secretions, blood, or the tongue).

c. Keep the surgical site clean and dry; after feeding, gently cleanse the suture line of formula or serosanguineous drainage with a solution such as normal saline or as designated by agency procedure.

d. Apply antibiotic ointment to the site as prescribed.

e. Elbow restraints should be used to prevent the infant from injuring or traumatizing the surgical site.

f. Monitor for signs and symptoms of infection at the surgical site.

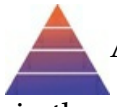
2. Cleft palate repair

a. Feedings are resumed by bottle, breast, or cup per surgeon preference; some surgeons prescribe the use of an Asepto syringe for feeding or a soft cup such as a sippy cup.

b. Oral packing may be secured to the palate (usually removed in 2 to 3 days).

c. Instruct the parents to avoid placing anything in the child's mouth that is harsh and could cause disruption of the surgical site.

3.  Soft elbow or jacket restraints may be used (check agency policies and procedures) to keep the child from touching the repair site; remove restraints at least every 1 to 2 hours (or per agency procedure) to assess skin integrity and circulation and to allow for exercising the arms.

4.  Avoid the use of oral suction or placing objects in the mouth such as a tongue depressor, thermometer, straws, spoons, forks, or pacifiers.

5. Provide analgesics for pain as prescribed.

6. Instruct the parents in feeding techniques and in the care of the surgical site.

7. Instruct the parents to monitor for signs of infection at the surgical site, such as redness, swelling, or

drainage.

8. Encourage the parents to hold the child.
9. Initiate appropriate referrals such as a dental referral and speech therapy referral.

IV. Esophageal **Atresia** and Tracheoesophageal Fistula (Fig. 33-2)

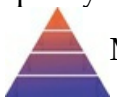
A. Description

1. The esophagus terminates before it reaches the stomach, ending in a blind pouch, or a fistula is present that forms an unnatural connection with the trachea.
2. The condition causes oral intake to enter the lungs or a large amount of air to enter the stomach, presenting a risk of coughing and choking; severe abdominal distention can occur.
3. Aspiration pneumonia and severe respiratory distress may develop, and death is likely to occur without surgical intervention.
4. Treatment includes maintenance of a patent airway, prevention of aspiration pneumonia, gastric or blind pouch decompression, supportive therapy, and surgical repair.

B. Assessment

1. Frothy saliva in the mouth and nose and excessive drooling
2.  The "3 Cs"—*c*oughing and *c*hoking during feedings and unexplained **cyanosis**
3. **Regurgitation** and vomiting
4. Abdominal distention
5. Increased respiratory distress during and after feeding

C. Preoperative interventions

1. The infant may be placed in a radiant warmer in which humidified oxygen is administered (intubation and mechanical ventilation may be necessary if respiratory distress occurs).
2. Maintain NPO status.
3. Maintain IV fluids as prescribed.
4. Monitor respiratory status closely.
5. Suction accumulated secretions from the mouth and pharynx.
6.  Maintain in a supine upright position (at least 30 degrees upright) to facilitate drainage and prevent aspiration of gastric secretions.
7. Keep the blind pouch empty of secretions by intermittent or continuous suction as prescribed; monitor its patency closely, because clogging from

mucus can occur easily.

8. If a gastrostomy tube is inserted, it may be left open so that air entering the stomach through the fistula can escape, minimizing the risk of regurgitation of gastric contents into the trachea.
9. Broad-spectrum antibiotics may be prescribed because of the high risk for aspiration pneumonia.

D.  Postoperative interventions

1. Monitor vital signs and respiratory status.
2. Maintain IV fluids, antibiotics, and parenteral nutrition as prescribed.
3. Monitor strict intake and output.
4. Monitor daily weight; assess for dehydration and possible fluid overload.
5. Assess for signs of pain.
6. Maintain chest tube if present.
7. Inspect the surgical site for signs and symptoms of infection.
8. Monitor for anastomotic leaks as evidenced by purulent drainage from the chest tube, increased temperature, and increased white blood cell count.
9. If a gastrostomy tube is present, it is usually attached to gravity drainage until the infant can tolerate feedings and the anastomosis is healed (usually postoperative day 5 to 7); then feedings are prescribed.
10. Before oral feedings and removal of the chest tube, prepare for an esophagogram as prescribed to check the integrity of the esophageal anastomosis.
11. Before feeding, elevate the gastrostomy tube and secure it above the level of the stomach to allow gastric secretions to pass to the duodenum and swallowed air to escape through the open gastrostomy tube.
12. Administer oral feedings with sterile water, followed by frequent small feedings of formula as prescribed.
13. Assess the cervical esophagostomy site, if present, for redness, breakdown, or exudate; remove accumulated drainage frequently, and apply protective ointment, barrier dressing, or a collection device as prescribed.
14. Provide nonnutritive sucking, using a pacifier for infants who remain NPO for extended periods (a pacifier should not be used if the infant is unable to handle secretions).
15. Instruct the parents in the techniques of suctioning, gastrostomy tube care and feedings, and skin site care as appropriate.

16.  Instruct the parents to identify behaviors that indicate the need for suctioning, signs of respiratory distress, and signs of a constricted esophagus (e.g., poor feeding, dysphagia, drooling, coughing during feedings, regurgitated undigested food).

V. Gastroesophageal Reflux Disease

A. Description

1.  Gastroesophageal reflux is backflow of gastric contents into the esophagus as a result of relaxation or incompetence of the lower esophageal or cardiac sphincter.
2. Most infants with gastroesophageal reflux have a mild problem that improves in about 1 year and requires medical therapy only.
3. Gastroesophageal reflux disease occurs when gastric contents reflux into the esophagus or oropharynx and produce symptoms.

B.  Assessment

1. Passive regurgitation or emesis
2. Poor weight gain
3. Irritability
4. Hematemesis
5. Heartburn (in older children)
6. Anemia from blood loss

C.  Interventions

1. Assess amount and characteristics of emesis.
2. Assess the relationship of vomiting to the times of feedings and infant activity.
3. Monitor breath sounds before and after feedings.
4. Assess for signs of aspiration, such as drooling, coughing, or dyspnea, after feeding.
5. Place suction equipment at the bedside.
6. Monitor intake and output.
7. Monitor for signs and symptoms of dehydration.
8. Maintain IV fluids as prescribed.

 *Complications of gastroesophageal reflux disease include esophagitis, esophageal strictures, aspiration of gastric contents, and aspiration pneumonia.*

D.  Positioning

1. The infant is placed in the supine position during sleep (to reduce the incidence of sudden infant death syndrome) unless the risk of death from aspiration or other serious complications of gastroesophageal reflux disease greatly outweighs the risks associated with the prone position (check the PHCP's prescription); otherwise, the prone position is acceptable only while the infant is awake and can be monitored.
2. In children older than 1 year, position with the head of the bed elevated.

E. Diet

1. Provide small, frequent feedings with predigested formula to decrease the amount of regurgitation.
2. Nutrition via nasogastric tube feedings may be prescribed if severe regurgitation and poor growth are present.
3. For infants, formula may be thickened by adding rice cereal to the formula (follow agency procedure); cross-cut the nipple.
4. Breast-feeding may continue, and the mother may provide more frequent feeding times or express milk for thickening with rice cereal.
5.  Burp the infant frequently when feeding and handle the infant minimally after feedings; monitor for coughing during feeding and other signs of aspiration.
6. For toddlers, feed solids first, followed by liquids.
7. Instruct the parents to avoid feeding the child fatty foods, chocolate, tomato products, carbonated liquids, fruit juices, citrus products, and spicy foods.
8. Instruct the parents that the child should avoid vigorous play after feeding and avoid feeding just before bedtime.

F. Medications

1. Antacids for symptom relief
2. Proton pump inhibitors and histamine H_2-receptor antagonists to decrease gastric acid secretion

VI. Hypertrophic Pyloric Stenosis (Fig. 33-3)

A. Description

1. Hypertrophy of the circular muscles of the pylorus causes narrowing of the pyloric canal between the stomach and the duodenum.
2. The stenosis usually develops in the first few weeks of life, causing projectile vomiting, dehydration, metabolic alkalosis, and failure to thrive.

B. Assessment

1.  Vomiting that progresses from mild regurgitation to forceful and projectile vomiting; it usually occurs after a feeding.
2. Vomitus contains gastric contents such as milk or formula, may contain mucus, may be blood-tinged, and does not usually contain bile.
3. The child exhibits hunger and irritability.
4.  Peristaltic waves are visible from left to right across the epigastrium during or immediately after a feeding.
5.  An olive-shaped mass is in the epigastrium just right of the umbilicus.
6. Signs of dehydration and malnutrition
7. Signs of electrolyte imbalances
8. Metabolic alkalosis

C. Interventions

1. Monitor strict intake and output.
2. Monitor vomiting episodes and stools.
3. Obtain daily weights.
4. Monitor for signs of dehydration and electrolyte imbalances.
5. Prepare the child and parents for pyloromyotomy if prescribed.

D.  Pyloromyotomy

1. Description: An incision through the muscle fibers of the pylorus; may be performed by laparoscopy
2. Preoperative interventions
    a. Monitor hydration status by daily weights, intake and output, and urine for specific gravity.
    b. Correct fluid and electrolyte imbalances; administer fluids intravenously as prescribed for rehydration.
    c. Maintain NPO status as prescribed.
    d. Monitor the number and character of stools.
    e. Maintain patency of the nasogastric tube placed for stomach decompression.
3. Postoperative interventions
    a. Monitor intake and output.

b. Begin small, frequent feedings postoperatively as prescribed.
c. Gradually increase amount and interval between feedings until a full feeding schedule has been reinstated.
d.  Feed the infant slowly, burping frequently, and handle the infant minimally after feedings.
e. Monitor for abdominal distention.
f. Monitor the surgical wound and for signs of infection.
g. Instruct the parents about wound care and feeding.

VII. Lactose Intolerance

A. Description: Inability to tolerate lactose as a result of an absence or deficiency of lactase, an enzyme found in the secretions of the small intestine that is required for the digestion of lactose

B. Assessment

1. Symptoms occur after the ingestion of milk or other dairy products.
2. Abdominal distention
3. Crampy, abdominal pain; colic
4. Diarrhea and excessive flatus

C. Interventions

1.  Eliminate the offending dairy product, or administer an enzyme tablet replacement.
2. Provide information to the parents about enzyme tablets that predigest the lactose in dairy products or supplement the body's own lactase.
3. Substitute soy-based formulas for cow's milk formula or human milk.
4. Allow milk consumption as tolerated.
5. Instruct the child and family that the child should drink milk with other foods rather than by itself.
6. Encourage consumption of hard cheese, cottage cheese, and yogurt, which contain the inactive lactase enzyme.
7. Encourage consumption of small amounts of dairy foods daily to help colonic bacteria adapt to ingested lactose.
8. Instruct the parents about the foods that contain lactose, including hidden sources.

 *A child with lactose intolerance can develop calcium and*

vitamin D deficiency. Instruct the parents about the importance of providing these supplements.

VIII. Celiac Disease

A. Description

1. Celiac disease is also known as gluten enteropathy or celiac sprue.
2.  Intolerance to gluten, the protein component of wheat, barley, rye, and oats, is characteristic.
3. Celiac disease results in the accumulation of the amino acid glutamine, which is toxic to intestinal mucosal cells.
4. Intestinal villous atrophy occurs, which affects absorption of ingested nutrients.
5. Symptoms of the disorder occur most often between the ages of 1 and 5 years.
6. There is usually an interval of 3 to 6 months between the introduction of gluten in the diet and the onset of symptoms.
7. Strict dietary avoidance of gluten minimizes the risk of developing malignant lymphoma of the small intestine and other gastrointestinal malignancies.

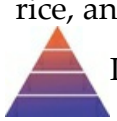
B. Assessment

1. Acute or insidious diarrhea
2. Steatorrhea
3. Anorexia
4. Abdominal pain and distention
5. Muscle wasting, particularly in the buttocks and extremities
6. Vomiting
7. Anemia
8. Irritability

C.  Celiac crisis

1. Precipitated by fasting, infection, or ingestion of gluten
2. Causes profuse watery diarrhea and vomiting
3. Can lead to rapid dehydration, electrolyte imbalance, and severe acidosis

D. Interventions

1.  Maintain a gluten-free diet, substituting corn, rice, and millet as grain sources.
2.  Instruct the parents and child about lifelong elimination of gluten sources such as wheat, rye, oats, and barley.

3. Administer mineral and vitamin supplements, including iron, folic acid, and fat-soluble vitamins A, D, E, and K.
4. Teach the child and parents about a gluten-free diet and about reading food labels carefully for hidden sources of gluten (Box 33-1).
5. Instruct the parents in measures to prevent celiac crisis.
6. Inform the parents about the Celiac Sprue Association.

IX. Appendicitis

A. Description

1. Inflammation of the appendix
2. When the appendix becomes inflamed or infected, perforation may occur within a matter of hours, leading to peritonitis, sepsis, septic shock, and potentially death.
3. Treatment is surgical removal of the appendix before perforation occurs.

B. Assessment

1. Pain in periumbilical area that descends to the right lower quadrant
2.  Abdominal pain that is most intense at McBurney's point
3. Referred pain indicating the presence of peritoneal irritation
4. Rebound tenderness and abdominal rigidity
5. Elevated white blood cell count
6. Side-lying position with abdominal guarding (legs flexed) to relieve pain
7. Difficulty walking and pain in the right hip
8. Low-grade fever
9. Anorexia, nausea, and vomiting after pain develops
10. Diarrhea

C.  Peritonitis

1. Description: Results from a perforated appendix
2. Assessment
    a. Increased fever
    b. Progressive abdominal distention
    c. Tachycardia and tachypnea
    d. Pallor
    e. Chills
    f. Restlessness and irritability

 *An indication of a perforated appendix is*

the sudden relief of pain and then a subsequent increase in pain accompanied by right guarding of the abdomen.

D. Appendectomy

1. Description: Surgical removal of the appendix
2. Interventions preoperatively
    a. Maintain NPO status.
    b. Administer IV fluids and electrolytes as prescribed to prevent dehydration and correct electrolyte imbalances.
    c. Monitor for changes in the level of pain.
    d. Monitor for signs of a ruptured appendix and peritonitis.
    e. Avoid the use of pain medications so as not to mask pain changes associated with perforation.
    f. Administer antibiotics as prescribed.
    g. Monitor bowel sounds.
    h.  Position in a right side-lying or low to semi-Fowler's position to promote comfort.
    i. Apply ice packs to the abdomen for 20 to 30 minutes every hour if prescribed.
    j.  Avoid the application of heat to the abdomen.
    k.  Avoid laxatives or enemas.
3. Postoperative interventions
    a. Monitor vital signs, particularly temperature.
    b. Maintain NPO status until bowel function has returned, advancing the diet gradually as tolerated and as prescribed when bowel sounds return.
    c. Assess the incision for signs of infection such as redness, swelling, drainage, and pain.
    d. Monitor drainage from the drain, which may be inserted if perforation occurred.
    e.  Position the child in a right side-lying or low to semi-Fowler's position with the legs slightly flexed to facilitate drainage.

f. Change the dressing as prescribed, and record the type and amount of drainage.
g. Perform wound irrigations if prescribed.
h. Maintain nasogastric tube suction and patency of the tube if present.
i. Administer antibiotics and analgesics as prescribed.

X. Hirschsprung's Disease (Fig. 33-4)

A. Description

1. Hirschsprung's disease is a congenital anomaly also known as congenital aganglionosis or aganglionic megacolon.
2. The disease occurs as the result of an absence of ganglion cells in the rectum and other areas of the affected intestine.
3. Mechanical obstruction results because of inadequate motility in an intestinal segment.
4. The disease may be a familial congenital defect or may be associated with other anomalies, such as Down's syndrome and genitourinary abnormalities.
5. A rectal biopsy specimen shows histological evidence of the absence of ganglionic cells.
6.  The most serious complication is enterocolitis; signs include fever, severe prostration, gastrointestinal bleeding, and explosive watery diarrhea.
7. Treatment for mild or moderate disease is based on relieving the chronic constipation with stool softeners and rectal irrigations; however, many children require surgery.
8. Treatment for moderate to severe disease involves a 2-step surgical procedure.
    a. Initially, in the neonatal period, a temporary colostomy is created to relieve obstruction and allow the normally innervated, dilated bowel to return to its normal size.
    b. When the bowel returns to its normal size, a complete surgical repair is performed via a pull-through procedure to excise portions of the bowel; at this time, the colostomy is closed.

B.  Assessment

1. Newborns
    a. Failure to pass meconium stool
    b. Refusal to suck
    c. Abdominal distention
    d. Bile-stained vomitus
2. Children
    a. Failure to gain weight and delayed growth
    b. Abdominal distention
    c. Vomiting
    d. Constipation alternating with diarrhea
    e. Ribbon-like and foul-smelling stools

C. Interventions: Medical management

1.  Maintain a low-fiber, high-calorie, high-protein diet; parenteral nutrition may be necessary in extreme situations.
2. Administer stool softeners as prescribed.
3. Administer daily rectal irrigations with normal saline to promote adequate elimination and prevent obstruction as prescribed.

D. Surgical management: Preoperative interventions

1. Assess bowel function.
2. Administer bowel preparation as prescribed.
3. Maintain NPO status.
4. Monitor hydration and fluid and electrolyte status; provide fluids intravenously as prescribed for hydration.
5. Administer antibiotics or colonic irrigations with an antibiotic solution as prescribed to clear the bowel of bacteria.
6. Monitor strict intake and output.
7. Obtain daily weight.
8. Measure abdominal girth daily.
9. Avoid taking the temperature rectally.
10. Monitor for respiratory distress associated with abdominal distention.

E.  Surgical management: Postoperative interventions

1. Monitor vital signs, avoiding taking the temperature rectally.
2. Measure abdominal girth daily and PRN (as needed).
3. Assess the surgical site for redness, swelling, and drainage.
4. Assess the stoma if present for bleeding or skin

breakdown (stoma should be red and moist).
5. Assess the anal area for the presence of stool, redness, or discharge.
6. Maintain NPO status as prescribed and until bowel sounds return or flatus is passed, usually within 48 to 72 hours.
7. Maintain nasogastric tube to allow intermittent suction until peristalsis returns.
8. Maintain IV fluids until the child tolerates appropriate oral intake, advancing the diet from clear liquids to regular as tolerated and as prescribed.
9. Assess for dehydration and fluid overload.
10. Monitor strict intake and output.
11. Obtain daily weight.
12. Assess for pain and provide comfort measures as required.
13. Provide the parents with instructions regarding colostomy care and skin care.
14. Teach the parents about the appropriate diet and the need for adequate fluid intake.

XI. Intussusception (Fig. 33-5)

A. Description

1. Telescoping of one portion of the bowel into another portion
2. The condition results in obstruction to the passage of intestinal contents.

B. Assessment

1. Colicky abdominal pain that causes the child to scream and draw the knees to the abdomen, similar to the fetal position
2. Vomiting of gastric contents
3. Bile-stained fecal emesis
4.  Currant jelly–like stools containing blood and mucus
5. Hypoactive or hyperactive bowel sounds
6. Tender distended abdomen, possibly with a palpable sausage-shaped mass in the upper right quadrant

C. Interventions

1.  Monitor for signs of perforation and shock as evidenced by fever, increased heart rate, changes in level of consciousness or blood pressure, and respiratory distress, and report immediately.
2. Antibiotics, IV fluids, and decompression via nasogastric tube may be prescribed.

3.  Monitor for the passage of normal, brown stool, which indicates that the intussusception has reduced itself.
4. Prepare for hydrostatic reduction as prescribed, if no signs of perforation or shock occur (in hydrostatic reduction, air or fluid is used to exert pressure on area involved to lessen, diminish, or resolve the prolapse).
5. Posthydrostatic reduction
    a. Monitor for the return of normal bowel sounds, for the passage of barium, and the characteristics of stool.
    b. Administer clear fluids, and advance the diet gradually as prescribed.
6. If surgery is required, postoperative care is similar to care after any abdominal surgery; procedure may be done via laparoscope.

XII. Abdominal Wall Defects

A. Omphalocele

1.  *Omphalocele* refers to herniation of the abdominal contents through the umbilical ring, usually with an intact peritoneal sac.
2. The protrusion is covered by a translucent sac that may contain bowel or other abdominal organs.
3. Rupture of the sac results in evisceration of the abdominal contents.
4.  Immediately after birth, the sac is covered with sterile gauze soaked in normal saline to prevent drying of abdominal contents; a layer of plastic wrap is placed over the gauze to provide additional protection against moisture loss.
5. Monitor vital signs frequently (every 2 to 4 hours), particularly temperature, because the infant can lose heat through the sac.
6.  Preoperatively: Maintain NPO status, administer IV fluids as prescribed to maintain hydration and electrolyte balance, monitor for signs of infection, and handle the infant carefully to prevent rupture of the sac.
7. Postoperatively: Control pain, prevent infection, maintain fluid and electrolyte balance, and ensure adequate nutrition.

B. Gastroschisis

1. Gastroschisis occurs when the herniation of the

intestine is lateral to the umbilical ring.

2.  No membrane covers the exposed bowel.
3.  The exposed bowel is covered loosely in saline-soaked pads, and the abdomen is loosely wrapped in a plastic drape or or agency approved drape; wrapping directly around the exposed bowel is contraindicated, because if the exposed bowel expands, wrapping could cause pressure and necrosis.
4. Preoperatively: Care is similar to that for omphalocele; surgery is performed within several hours after birth because no membrane is covering the sac.
5. Postoperatively: Most infants develop prolonged ileus, require mechanical ventilation, and need parenteral nutrition; otherwise, care is similar to that for omphalocele.

XIII. Umbilical and Inguinal Hernia and Hydrocele

A. Description

1. An umbilical hernia is a protrusion of the bowel through an abnormal opening in the abdominal wall.
2. In children, hernias most commonly occur at the umbilicus and also through the inguinal canal.
3. A hydrocele is the presence of abdominal fluid in the scrotal sac.

B. Assessment

1. Umbilical hernia: Soft swelling or protrusion around the umbilicus that is usually reducible with a finger
2. Inguinal hernia
    a. Inguinal hernia refers to a painless inguinal swelling that is reducible.
    b. Swelling may disappear during periods of rest and is most noticeable when the infant cries or coughs.
3.  Incarcerated hernia
    a. Incarcerated hernia occurs when the descended portion of the bowel becomes tightly caught in the hernial sac, compromising blood supply.
    b. This represents a medical emergency requiring surgical repair.
    c. Assessment findings include irritability, tenderness at site, anorexia, abdominal distention, and difficulty defecating.
    d. The protrusion cannot be reduced, and

complete intestinal obstruction and gangrene may occur.

4. Noncommunicating hydrocele
    a. Noncommunicating hydrocele occurs when residual peritoneal fluid is trapped in the scrotum with no communication to the peritoneal cavity.
    b. Hydrocele usually disappears by age 1 year as the fluid is reabsorbed.
5. Communicating hydrocele
    a. Communicating hydrocele is associated with a hernia that remains open from the scrotum to the abdominal cavity.
    b. Assessment includes a bulge in the inguinal area or the scrotum that increases with crying or straining and decreases when the infant is at rest. Parents may also report the bulge is smaller in the morning but increases in size throughout the day.

C. Postoperative interventions (hernia)
1. Monitor vital signs.
2. Assess for wound infection.
3. Monitor for redness or drainage.
4. Monitor input and output and hydration status.
5. Advance the diet as tolerated.
6. Administer analgesics as prescribed.

D. Postoperative interventions (hydrocele)
1. Provide ice bags and a scrotal support to relieve pain and swelling.
2. Instruct the parents that tub bathing needs to be avoided until the incision heals.
3. Instruct the parents that strenuous physical activities need to be avoided.
4. Advise parent that the scrotum may not immediately return to normal size.

XIV. Constipation and Encopresis

A. Description
1. Constipation is the infrequent and difficult passage of dry, hard stools.
2. Encopresis is constipation with fecal incontinence; children often complain that soiling is involuntary and occurs without warning.
3. If the child does not have a neurological or anatomical disorder, encopresis is usually the result of fecal impaction and an enlarged rectum caused by chronic constipation.

B. Assessment

1. Constipation
    a. Abdominal pain and cramping without distention
    b. Palpable movable fecal masses
    c. Normal or decreased bowel sounds
    d. Malaise and headache
    e. Anorexia, nausea, and vomiting
2. Encopresis
    a. Evidence of soiling of clothing
    b. Scratching or rubbing of the anal area
    c. Fecal odor
    d. Social withdrawal

C.  Interventions

1. Maintain a diet high in fiber and fluids to promote bowel elimination (Box 33-2).
2. Monitor treatment regimen for severe encopresis for 3 to 6 months.
3. Decrease sugar and milk intake.
4. Administer enemas as prescribed until impaction is cleared.
5. Monitor for hypernatremia or hyperphosphatemia when administering repeated enemas.
    a. Signs of hypernatremia include increased thirst; dry, sticky mucous membranes; flushed skin; increased temperature; nausea and vomiting; oliguria; and lethargy.
    b. Signs of hyperphosphatemia include tetany, muscle weakness, dysrhythmias, and hypotension.
6. Administer stool softeners or laxatives as prescribed.
7. Encourage the child to sit on the toilet for 5 to 10 minutes approximately 20 to 30 minutes after breakfast and dinner to assist with defecation.

XV. Irritable Bowel Syndrome

A. Description

1. Irritable bowel syndrome results from increased motility, which can lead to spasm and pain.
2. The diagnosis is based on the elimination of pathological conditions.
3. The syndrome is a self-limiting, intermittent problem with no definitive treatment.
4. Stress and emotional factors may contribute to its occurrence.

B.  Assessment

1. Diffuse abdominal pain unrelated to meals or activity
2. Alternating constipation and diarrhea with the presence of undigested food and mucus in the stool

C. Interventions

1. Reassure the parents and child that the problem is self-limiting and intermittent and will resolve.
2. Anticholinergics may be prescribed (antidepressants may be needed in severe cases).
3. Encourage the maintenance of a healthy, well-balanced, moderate-fiber, and low-fat diet.
4. Encourage health promotion activities such as exercise and school activities.
5. Inform the parents of psychosocial resources if required.

XVI. Imperforate Anus

A. Description: Incomplete development or absence of the anus in its normal position in the perineum

B. Types

1. A membrane is noted over the anal opening, with a normal anus just above the membrane.
2. There is complete absence of the anus (anal agenesis) with a rectal pouch ending some distance above.
3. Rectum ends blindly or has a fistula connection to the perineum, urethra, bladder, or vagina.

C. Assessment (Box 33-3)

D. Preoperative interventions

1.  Determine presence of an anal opening.
2.  Monitor for the presence of stool in the urine and vagina (indicates a fistula) and report immediately.
3. Administer IV fluids as prescribed.
4. Prepare the child and parents for the surgical procedures, including the potential for colostomy.

E. Postoperative interventions

1. Monitor the skin for signs of infection.
2.  The preferred position is a side-lying prone position with the hips elevated or a supine position with the legs suspended at a 90-degree angle to the trunk to reduce edema and pressure on the surgical site.
3. Keep the anal surgical incision clean and dry, and monitor for redness, swelling, or drainage.

4. Maintain NPO status and nasogastric tube if in place.
5. Maintain IV fluids until gastrointestinal motility returns.
6. Provide care for colostomy, if present, as prescribed.
7.  A new colostomy stoma may be red and edematous, but the edema should decrease with time.
8. Instruct the parents to perform anal dilation if prescribed to achieve and maintain bowel patency.
9. Instruct the parents to use only anal dilators supplied by the PHCP and a water-soluble lubricant and to insert the dilator no more than 1 to 2 cm into the anus to prevent damage to the mucosa.

XVII.  Hepatitis

A. This section contains specific information regarding hepatitis as it relates to infants and children; see also Chapters 22 and 48.
B. Description: An acute or chronic inflammation of the liver that may be caused by a virus, a medication reaction, or another disease process
C. Hepatitis A (HAV)
1. Highest incidence of HAV infection occurs among preschool or school-age children younger than 15 years.
2. Many infected children are asymptomatic, but mild nausea, vomiting, and diarrhea may occur.
3. Infected children who are asymptomatic still can spread HAV to others.
D. Hepatitis B (HBV)
1. Most HBV infection in children is acquired perinatally.
2. Newborns are at risk if the mother is infected with HBV or was a carrier of HBV during pregnancy.
3. Possible routes of maternal-fetal (newborn) transmission include leakage of the virus across the placenta late in pregnancy or during labor, ingestion of amniotic fluid or maternal blood, and breast-feeding, especially if the mother has cracked nipples.
4. The severity in the infant varies from no liver disease to fulminant (severe acute course) or chronic active disease.
5. In children and adolescents, HBV occurs in specific high-risk groups, including children with hemophilia or other disorders requiring multiple blood transfusions, children or adolescents involved in IV drug abuse, institutionalized children, preschool children in endemic areas, and children who have had heterosexual activity or sexual activity with

homosexual men.

6. Infection with HBV can cause a carrier state and lead to eventual cirrhosis or hepatocellular carcinoma in adulthood.

E. Hepatitis C (HCV)

1. Transmission of HCV is primarily by the parenteral route.
2. Some children may be asymptomatic, but HCV often becomes a chronic condition and can cause cirrhosis and hepatocellular carcinoma.

F. Hepatitis D

1. Infection occurs in children already infected with HBV.
2. Acute and chronic forms tend to be more severe than HBV and can lead to cirrhosis.
3. Children with hemophilia are more likely to be infected, as are those who are IV drug users.

G. Hepatitis E

1. Infection is uncommon in children.
2. Infection is not a chronic condition, does not cause chronic liver disease, and has no carrier state.

H.  Assessment (Box 33-4)

I. Laboratory diagnostic evaluation: See Chapters 10 and 48.

J.  Prevention

1. Immunoglobulin provides **passive immunity** and may be effective for preexposure prophylaxis to prevent HAV infection.
2. Hepatitis B immunoglobulin provides passive immunity and may be effective in preventing infection after a 1-time exposure (should be given immediately after exposure), such as an accidental needle puncture or other contact of contaminated material with mucous membranes; immunoglobulin should also be given to newborns whose mothers are positive for hepatitis B surface antigen.
3. Hepatitis A **vaccine** and hepatitis B vaccine: See Chapters 18 and 40.

 *Proper hand washing and standard precautions, as well as enteric precautions, can prevent the spread of viral hepatitis.*

K.  Interventions

1. Strict hand washing is required.

2. Hospitalization is required in the event of coagulopathy or fulminant hepatitis.
3. Standard precautions and enteric precautions are followed during hospitalization.
4. Provide enteric precautions for at least 1 week after the onset of jaundice with HAV.
5. The hospitalized child usually is not isolated in a separate room unless he or she is fecally incontinent and items are likely to become contaminated with feces.
6. Children are discouraged from sharing toys.
7. Instruct the child and parents in effective hand washing techniques.
8. Instruct the parents to disinfect diaper-changing surfaces thoroughly with a solution of ¼ cup (60 mL) bleach in 1 gallon (3.8 L) of water.
9. Maintain comfort and provide adequate rest and sleep.
10. Provide a low-fat, well-balanced diet.
11. Inform the parents that because HAV is not infectious 1 week after the onset of jaundice, the child may return to school at that time if he or she feels well enough.
12. Inform the parents that jaundice may appear worse before it resolves.
13. Caution the parents about administering any medications to the child; explain the role of the liver in detoxification and excretion of medications in understandable terms.
14. Instruct the parents about the signs of the child's condition worsening, such as changes in neurological status, bleeding, and fluid retention.

XVIII. Ingestion of Poisons (see Priority Nursing Actions)

A. Lead poisoning

1. Description: Excessive accumulation of lead in the blood
2.  Causes
    a. The pathway for exposure may be food, air, or water.
    b. Dust and soil contaminated with lead may be a source of exposure.
    c. Lead enters the child's body through ingestion or inhalation or through placental transmission to an unborn child when the mother is exposed; the most common route is hand to mouth lead-containing from contaminated

objects, such as loose paint chips, pottery, or ceramic ware coupled with the inhalation of lead dust in the environment.

d. When lead enters the body, it affects the erythrocytes, bones and teeth, and organs and tissues, including the brain and nervous system; the most serious consequences are the effects on the central nervous system.

3.  Universal screening

a. Screening is recommended for children 1 to 2 years old; children at high risk should be screened earlier.

b. Any child between the ages of 3 and 6 years who has not been screened should be tested.

4. Targeted screening

a. Targeted screening is acceptable in low-risk areas.

b. A child at the age of 1 to 2 years (or a child between the ages of 3 and 6 years who has not been screened) may be targeted for screening if determined to be at risk.

5. Blood lead level test: Used for screening and diagnosis (Table 33-1)

6. Erythrocyte protoporphyrin test

a. Indicator of anemia

b. Normal value for a child: 35 mcg/100 mL of whole blood or lower

7.  Chelation therapy

a. Chelation therapy removes lead from the circulating blood and from some organs and tissues.

b. Therapy does not counteract any effects of the lead.

c. Medications include calcium disodium edetate, and succimer, an oral preparation; British anti-Lewisite is used in conjunction with ethylenediamine tetraacetic acid (EDTA).

d. British anti-Lewisite is administered via the IV route or the deep intramuscular

route and is contraindicated in children with an allergy to peanuts because the medication is prepared in a peanut oil solution; it is also contraindicated in children with glucose-6-phosphate dehydrogenase (G6PD) deficiency and should not be given with iron.

e. The function of the renal, hepatic, and hematological systems must be monitored closely.

f. Ensure adequate urinary output before administering the medication, and monitor the output and pH of the urine closely during and after therapy.

g. Provide adequate hydration and monitor kidney function for nephrotoxicity when the medication is given, because the medication is excreted via the kidneys.

h. Follow-up of lead levels needs to be done to monitor progress.

i. Provide instructions to parents about safety from lead hazards, medication administration, and the need for follow-up.

j. Confirm that the child will be discharged to a home without lead hazards.

B.  Acetaminophen

1. Description

a. Seriousness of ingestion is determined by the amount ingested and the length of time before intervention.

b. Toxic dose is 150 mg/kg or higher in children.

2. Assessment

a. First 2 to 4 hours: Malaise, nausea, vomiting, sweating, pallor, weakness

b. Latent period: 24 to 36 hours; child improves

c. Hepatic involvement: May last 7 days and may be permanent; right upper quadrant pain, jaundice, confusion, stupor, elevated liver enzyme and bilirubin levels, prolonged prothrombin time

3.  Interventions

a. Administer antidote: *N*-Acetylcysteine.
b. Dilute antidote in juice or soda because of its offensive odor.
c. Loading dose is followed by maintenance doses.
d. In an unconscious child, prepare to administer gastric lavage with activated charcoal to decrease the absorption of acetaminophen.
e. If using activated charcoal with lavage, do not also use *N*-acetylcysteine because activated charcoal inactivates the antidote.

C.  Acetylsalicylic acid (aspirin)

1. Description

a. Overdose may be caused by acute ingestion or chronic ingestion.
b. Acute: Severe toxicity with 300 to 500 mg/kg
c. Chronic: Ingestion of more than 100 mg/kg per day for 2 days or more, which can be more serious than acute ingestion

2. Assessment

a. Gastrointestinal effects: Nausea, vomiting, and thirst from dehydration
b. Central nervous system effects: Hyperpnea, confusion, tinnitus, seizures, coma, respiratory failure, circulatory collapse
c. Renal effects: Oliguria
d. Hematopoietic effects: Bleeding tendencies
e. Metabolic effects: Diaphoresis, fever, hyponatremia, hypokalemia, dehydration, hypoglycemia, metabolic acidosis

3.  Interventions

a. Prepare to administer activated charcoal to decrease absorption of salicylate.
b. Emesis or cathartic measures may be prescribed.

c. Administer IV fluids; sodium bicarbonate may be prescribed to correct metabolic acidosis.
d. Other interventions include external cooling, anticonvulsants, vitamin K (if bleeding), and oxygen.
e. Prepare the child for dialysis as prescribed if the child is unresponsive to the therapy.

D. Corrosives

1. Description

a. Items that can cause poisoning include household cleaners, detergents, bleach, paint or paint thinners, and batteries.
b. Liquid corrosives can cause more damage to the victim than other types of corrosives, such as granular.

2. Assessment

a. Severe burning in the mouth, throat, or stomach
b. Edema of the mucous membranes, lips, tongue, and pharynx
c. Vomiting
d. Drooling and inability to clear secretions

3.  Interventions

a. Dilute corrosive with water or milk as prescribed (usually no more than 4 oz [120 mL])
b. Inducing vomiting is contraindicated because vomiting redamages the mucous membranes.
c. Neutralization of the ingested corrosive is not done because it can cause a reaction producing heat and burns.

Educate parents to call the Poison Control Center immediately in the event of poisoning. The parents need to post the Poison Control Center telephone number near each phone in the house and have it in their mobile phones.

XIX. Intestinal Parasites

A. Description: Common infections in children are giardiasis and pinworm infestation.

1. Giardiasis is caused by protozoa and is prevalent among children in crowded environments, such as

classrooms or day care centers.

2. Pinworms (enterobiasis) are universally present in temperate climate zones and are easily transmitted in crowded environments.

B. Assessment

1. Giardiasis

a. Diarrhea and vomiting
b. Anorexia
c. Failure to thrive
d. Abdominal cramps with intermittent loose stools and constipation
e. Steatorrhea
f. Stool specimens from 3 or more collections are used for diagnosis.

2. Pinworms

a. Intense perianal itching
b. Irritability, restlessness
c. Poor sleeping
d. Bed wetting

C. Interventions

1. Giardiasis

a. Medications that kill the parasites may be prescribed; medications are not usually prescribed for children younger than 2 years.
b. Caregivers should wash hands meticulously.
c. Provide education to family and caregivers regarding sanitary practices.

2.  Pinworms

a. Perform a visual inspection of the anus with a flashlight 2 to 3 hours after sleep.
b. The tape test is the most common diagnostic test.
c. Educate the family and caregivers regarding the tape test. A loop of transparent tape is placed firmly against the child's perianal area; it is removed in the morning and placed in a glass jar or plastic bag and transported to the laboratory for analysis.
d. Medications that kill the parasites may be prescribed; medications are not usually prescribed for children younger than 2 years.

e. The medication regimen may be repeated in 2 weeks to prevent reinfection.
f. All members of the family are treated for the infection.
g. Teach the family and caregivers about the importance of meticulous hand washing and about washing all clothes and bed linens in hot water.

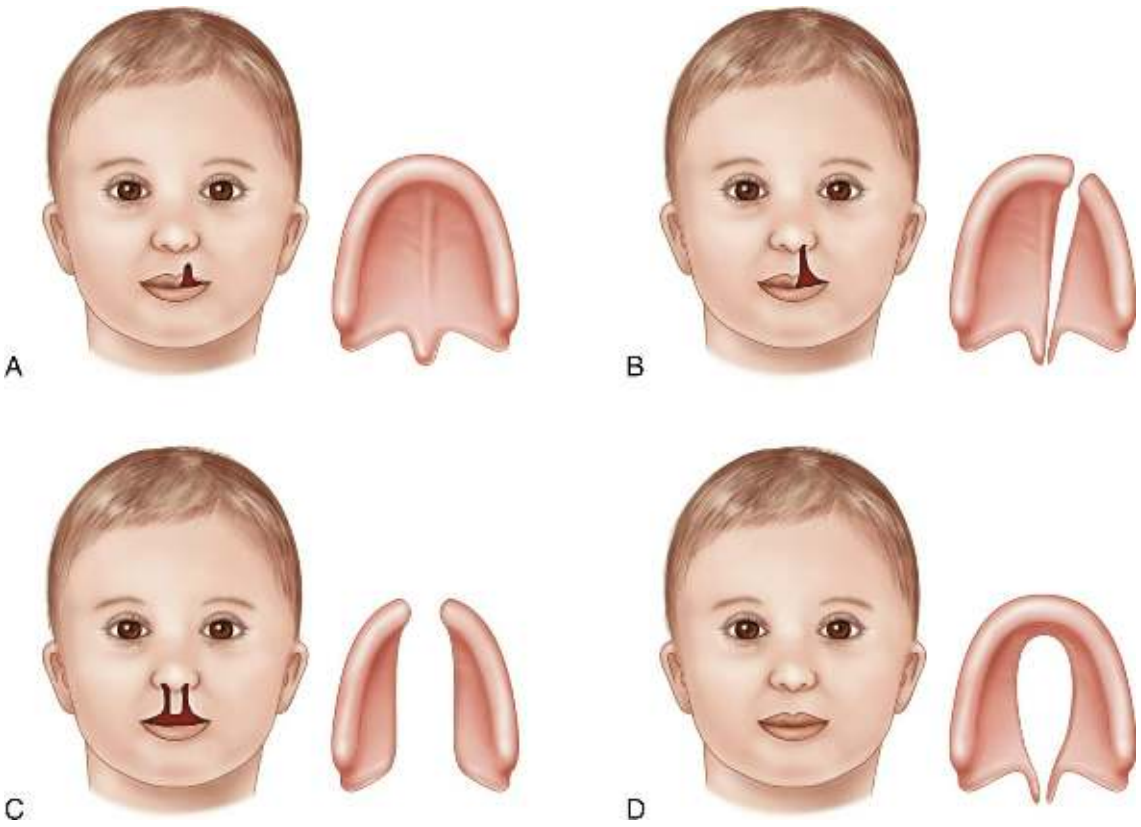


FIG. 33-1 Variations in clefts of lip and palate at birth. **A,** Notch in vermilion border. **B,** Unilateral cleft lip and palate. **C,** Bilateral cleft lip and palate. **D,** Cleft palate.

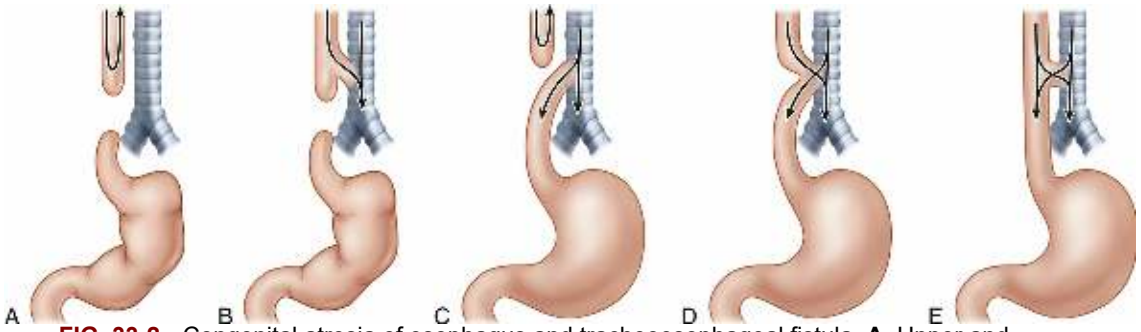
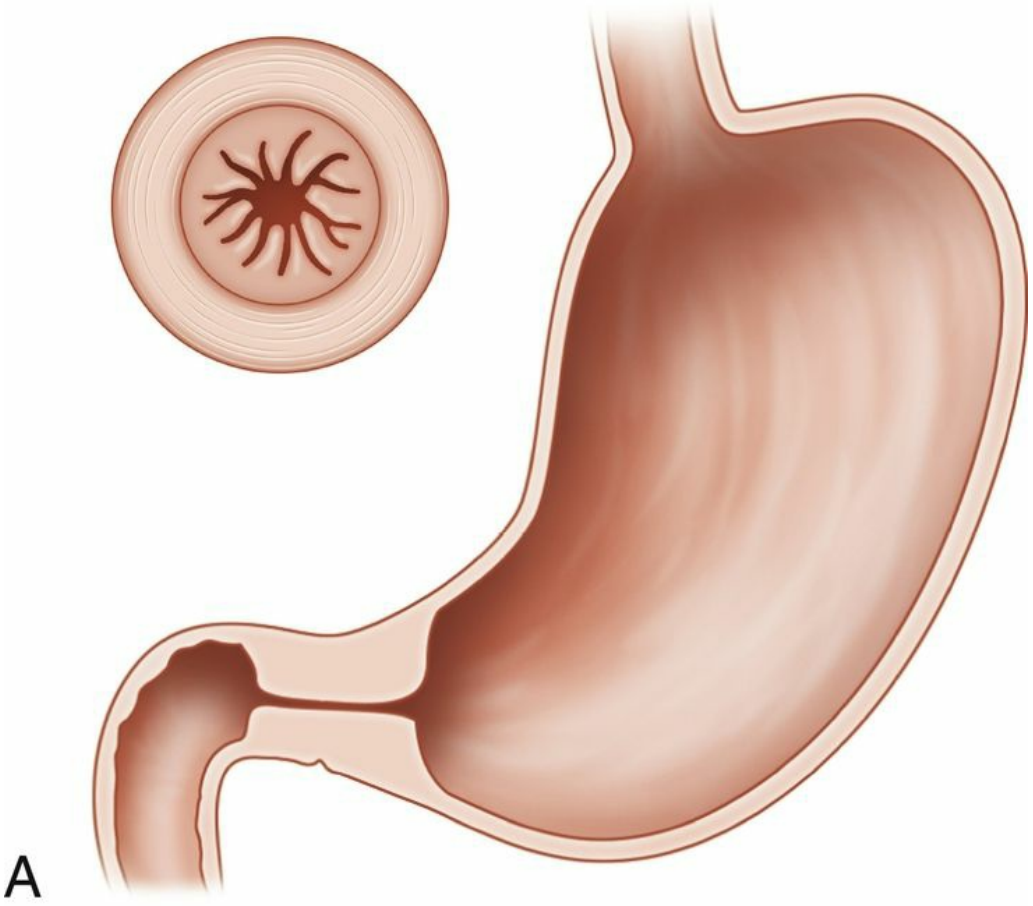


FIG. 33-2 Congenital atresia of esophagus and tracheoesophageal fistula. **A,** Upper and lower segments of esophagus end in blind sac (occurring in 5% to 8% of such infants). **B,** Upper segment of esophagus ends in atresia and connects to trachea by fistulous tract (occurring rarely). **C,** Upper segment of esophagus ends in blind pouch; lower segment connects with trachea by small fistulous tract (occurring in 80% to 95% of such infants). **D,** Both segments of esophagus connect by fistulous tracts to trachea (occurring in less than 1% of such infants). Infant may aspirate with first feeding. **E,** Esophagus is continuous but connects by fistulous tract to trachea (known as *H-type*).


A

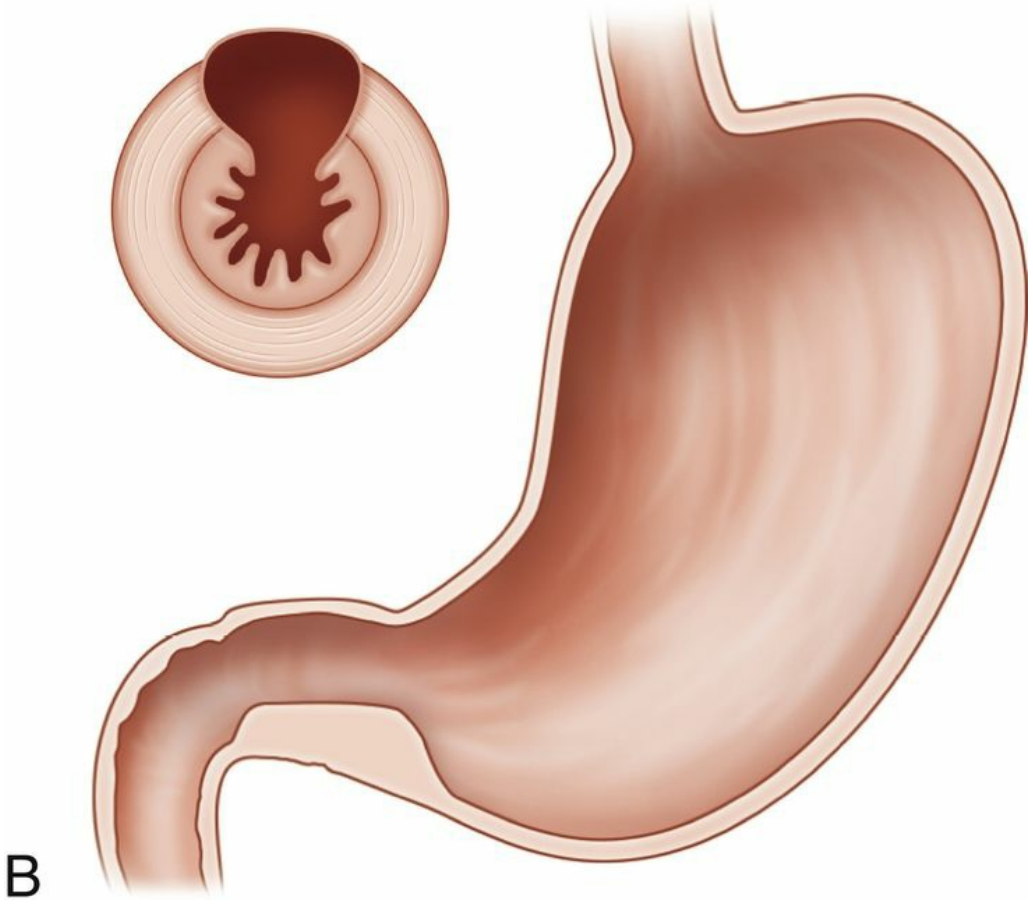

B

FIG. 33-3 Hypertrophic pyloric stenosis. **A,** Enlarged muscular area nearly obliterates pyloric channel. **B,** Longitudinal surgical division of muscle down to submucosa establishes adequate passageway.

Box 33-1

Basics of a Gluten-Free Diet

Foods Allowed

Meat such as beef, pork, poultry, and fish; eggs; milk and some dairy products; vegetables, fruits, rice, corn, gluten-free flour, puffed rice, cornflakes, cornmeal, and precooked gluten-free cereals are allowed.

Foods Prohibited

Commercially prepared ice cream; malted milk; prepared puddings; and grains, including anything made from wheat, rye, oats, or barley, such as breads, rolls, cookies, cakes, crackers, cereal, spaghetti, macaroni noodles, beer, and ale, are prohibited.

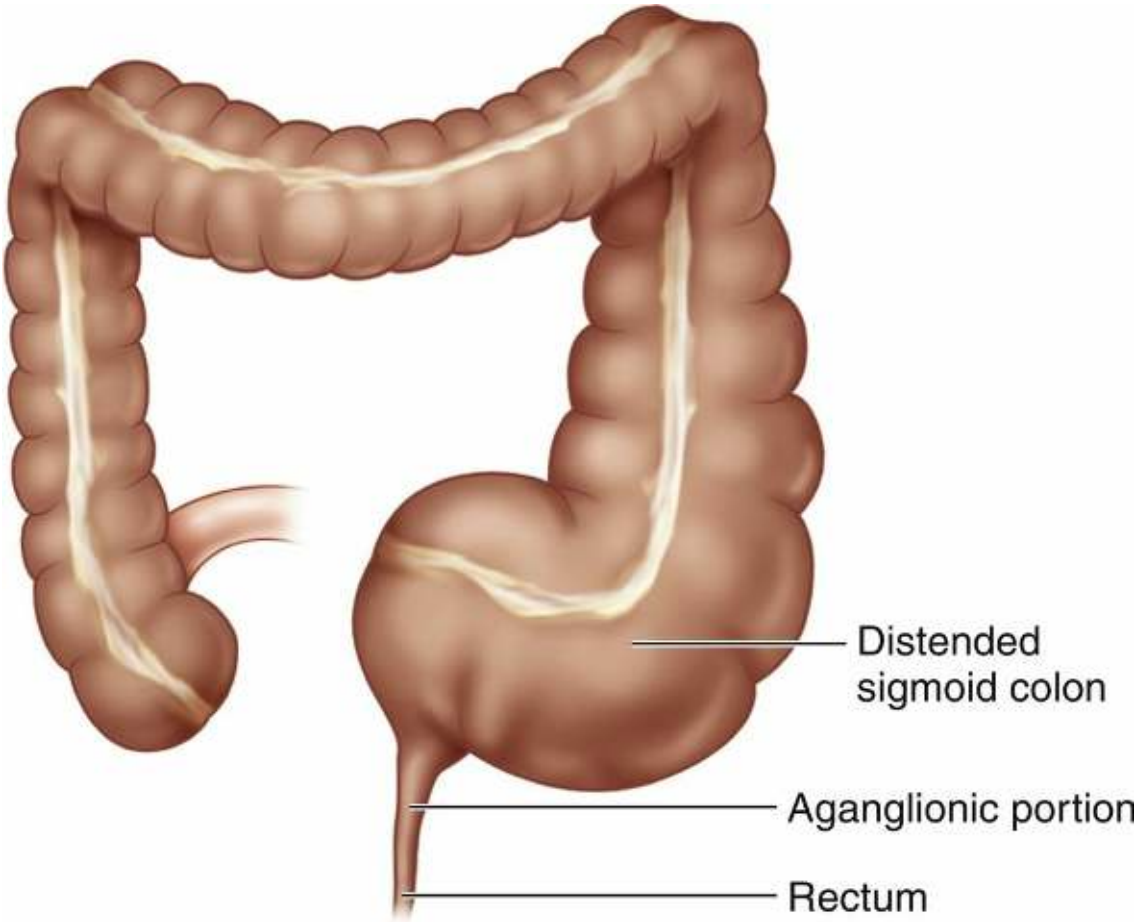


FIG. 33-4 Hirschsprung's disease.

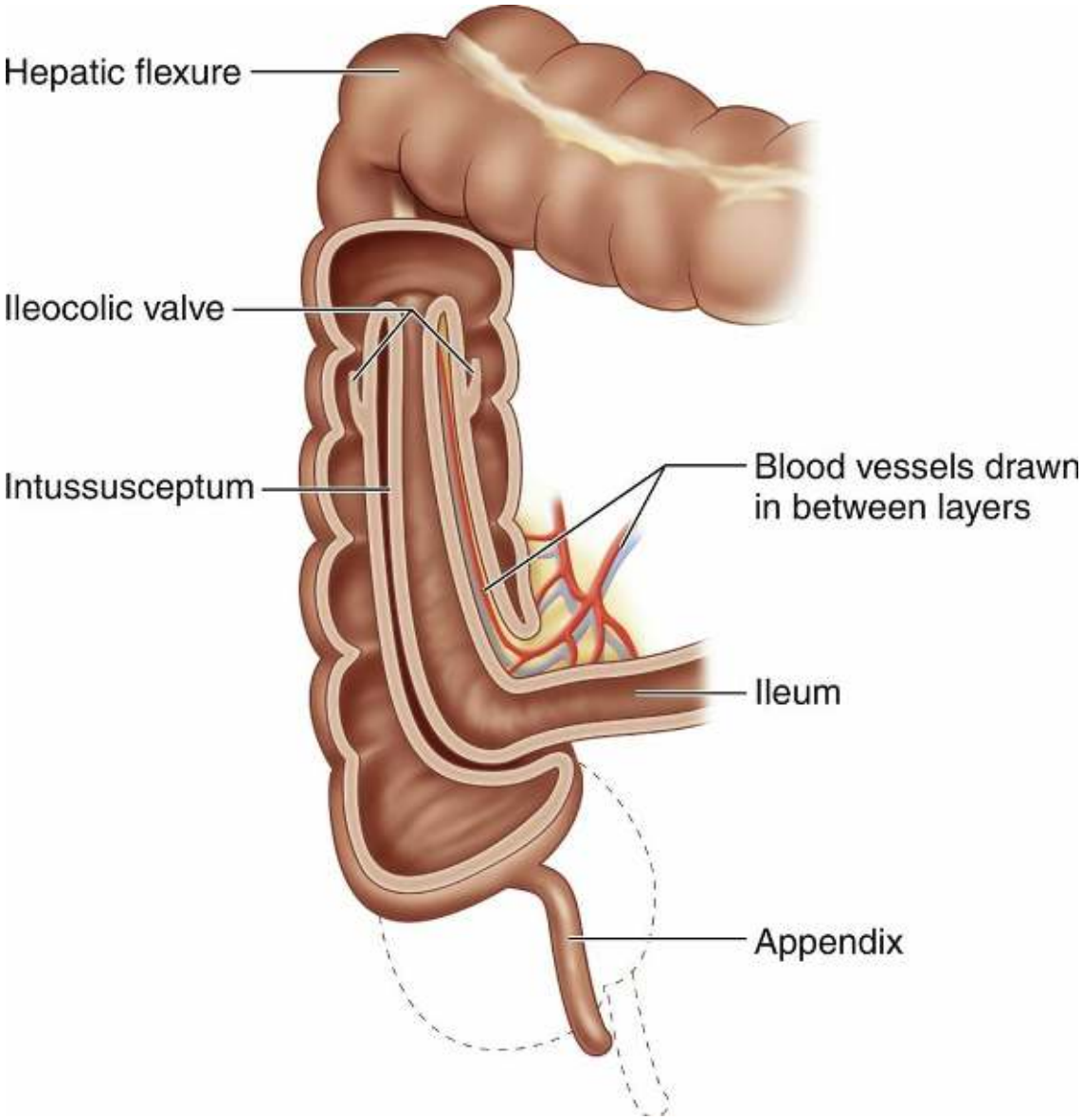


FIG. 33-5 Ileocolic intussusception.

Box 33-2

High-Fiber Foods

Bread and Grains

- Whole-grain bread or rolls
- Whole-grain cereals
- Bran
- Pancakes, waffles, and muffins with fruit or bran

- Unrefined (brown) rice

Vegetables

- Raw vegetables, especially broccoli, cabbage, carrots, cauliflower, celery, lettuce, and spinach
- Cooked vegetables, including those listed above and asparagus, beans, Brussels sprouts, corn, potatoes, rhubarb, squash, string beans, and turnips

Fruits

- Prunes, raisins, or other dried fruits
- Raw fruits, especially those with skins or seeds, other than ripe banana or avocado

Miscellaneous

- Legumes (beans), popcorn, nuts, and seeds
- High-fiber snack bars

Data from Perry S, Hockenberry M, Lowdermilk D, Wilson D: *Maternal-child nursing care*, ed 4, St. Louis, 2010, Mosby.

Box 33-3

Assessment Findings: Imperforate Anus

- Failure to pass meconium stool
- Absence or stenosis of the anal rectal canal
- Presence of an anal membrane
- External fistula to the perineum

Box 33-4

Assessment Findings: Hepatitis

Prodromal or Anicteric Phase

- Lasts 5 to 7 days
- Absence of jaundice
- Anorexia, malaise, lethargy, easy fatigability
- Fever (especially in adolescents)

- Nausea and vomiting
- Epigastric or right upper quadrant abdominal pain
- Arthralgia and rashes (more likely with hepatitis B virus)
- Hepatomegaly

Icteric Phase

- Jaundice, which is best assessed in the sclera, nail beds, and mucous membranes
- Dark urine and pale stools
- Pruritus

Table 33-1

Blood Lead Level Test Results and Interventions

Level (mcg/dL)	Intervention
< 5	Reassess or rescreen in 1 yr or sooner if exposure status changes
5-14	Provide family lead education, follow-up testing, and social service referral for home assessment if necessary
15-19	Provide family education about lead, follow-up testing, and social service referral if necessary; on follow-up testing, initiate actions for blood lead level of 20-44 mcg/dL
20-44	Provide coordination of care and clinical management, including treatment, environmental investigation, and lead-hazard control
45-69	Provide coordination of care and clinical management within 48 hr, including treatment, environmental investigation, and lead-hazard control (the child must not remain in a lead-hazardous environment if resolution is necessary)
≥ 70	Medical treatment is provided immediately, including coordination of care, clinical management, environmental investigation, and lead-hazard control

Data from Perry S, Hockenberry M, Lowdermilk D, Wilson D: *Maternal-child nursing care,* ed 4, St. Louis, 2010, Mosby; and Centers for Disease Control and Prevention: *Blood lead levels in children* (website): https://www.cdc.gov/nceh/lead/default.htm.

Priority Nursing Actions

Poisoning Treatment in the Emergency Department

1. Assess the child.
2. Terminate exposure to the poison.
3. Identify the poison.
4. Take measures to prevent absorption of the poison.
5. Document the occurrence, assessment findings, poison ingested, treatment measures, and the child's response.

Reference

Hockenberry. Wilson, Rodgers. 2017;410.

Practice Questions

332. The clinic nurse reviews the record of an infant and notes that the primary health care provider (PHCP) has documented a diagnosis of suspected Hirschsprung's disease. The nurse reviews the assessment findings documented in the record, knowing that which sign **most likely** led the mother to seek health care for the infant?
    1. Diarrhea
    2. Projectile vomiting
    3. Regurgitation of feedings
    4. Foul-smelling ribbon-like stools
333. An infant has just returned to the nursing unit after surgical repair of a cleft lip on the right side. The nurse should place the infant in which **best** position at this time?
    1. Prone position
    2. On the stomach
    3. Left lateral position
    4. Right lateral position
334. The nurse reviews the record of a newborn infant and notes that a diagnosis of esophageal atresia with tracheoesophageal fistula is suspected. The nurse expects to note which **most likely** sign of this condition documented in the record?
    1. Incessant crying
    2. Coughing at nighttime
    3. Choking with feedings
    4. Severe projectile vomiting
335. The nurse provides feeding instructions to a parent of an infant diagnosed with gastroesophageal reflux disease. Which instruction should the nurse give to the parent to assist in reducing the episodes of emesis?
    1. Provide less frequent, larger feedings.
    2. Burp the infant less frequently during feedings.
    3. Thin the feedings by adding water to the formula.
    4. Thicken the feedings by adding rice cereal to the formula.
336. A child is hospitalized because of persistent vomiting. The nurse should monitor the child closely for which problem?
    1. Diarrhea
    2. Metabolic acidosis
    3. Metabolic alkalosis
    4. Hyperactive bowel sounds
337. The nurse is caring for a newborn with a suspected diagnosis of imperforate anus. The nurse monitors the infant, knowing that which is a clinical manifestation associated with this disorder?
    1. Bile-stained fecal emesis

2. The passage of currant jelly–like stools
3. Failure to pass meconium stool in the first 24 hours after birth
4. Sausage-shaped mass palpated in the upper right abdominal quadrant

338. The nurse admits a child to the hospital with a diagnosis of pyloric stenosis. On assessment, which data would the nurse expect to obtain when asking the parent about the child's symptoms?
    1. Watery diarrhea
    2. Projectile vomiting
    3. Increased urine output
    4. Vomiting large amounts of bile
339. The nurse provides home care instructions to the parents of a child with celiac disease. The nurse should teach the parents to include which food item in the child's diet?
    1. Rice
    2. Oatmeal
    3. Rye toast
    4. Wheat bread
340. The nurse is preparing to care for a child with a diagnosis of intussusception. The nurse reviews the child's record and expects to note which sign of this disorder documented?
    1. Watery diarrhea
    2. Ribbon-like stools
    3. Profuse projectile vomiting
    4. Bright red blood and mucus in the stools
341. Which interventions should the nurse include when creating a care plan for a child with hepatitis? **Select all that apply.**
    - ☐ 1. Providing a low-fat, well-balanced diet.
    - ☐ 2. Teaching the child effective hand-washing techniques.
    - ☐ 3. Scheduling playtime in the playroom with other children.
    - ☐ 4. Notifying the primary health care provider (PHCP) if jaundice is present.
    - ☐ 5. Instructing the parents to avoid administering medications unless prescribed.
    - ☐ 6. Arranging for indefinite home schooling because the child will not be able to return to school.

Answers

332. ***Answer:*** 4

Rationale: Hirschsprung's disease is a congenital anomaly also known as *congenital aganglionosis* or *aganglionic megacolon.* It occurs as the result of an absence

of ganglion cells in the rectum and other areas of the affected intestine. Chronic constipation beginning in the first month of life and resulting in pellet-like or ribbon-like stools that are foul-smelling is a clinical manifestation of this disorder. Delayed passage or absence of meconium stool in the neonatal period is also a sign. Bowel obstruction, especially in the neonatal period; abdominal pain and distention; and failure to thrive are also clinical manifestations. Options 1, 2, and 3 are not associated specifically with this disorder.

Test-Taking Strategy: Note the **strategic words,** *most likely.* Use knowledge regarding the pathophysiology associated with Hirschsprung's disease to direct you to the correct option. Remember that chronic constipation beginning in the first month of life and resulting in pellet-like or ribbon-like, foul-smelling stools is a clinical manifestation of this disorder.

Level of Cognitive Ability: Analyzing
Client Needs: Physiological Integrity
Integrated Process: Nursing Process—Assessment
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Gastrointestinal and Rectal Problems
Priority Concepts: Clinical Judgment; Elimination
Reference: McKinney et al. (2018), pp. 988-989.

333. ***Answer:*** 3

Rationale: A cleft lip is a congenital anomaly that occurs as a result of failure of soft tissue or bony structure to fuse during embryonic development. After cleft lip repair, the nurse avoids positioning an infant on the side of the repair or in the prone position, because these positions can cause rubbing of the surgical site on the mattress. The nurse positions the infant on the side lateral to the repair or on the back upright and positions the infant to prevent airway obstruction by secretions, blood, or the tongue. From the options provided, placing the infant on the left side immediately after surgery is best to prevent the risk of aspiration if the infant vomits.

Test-Taking Strategy: Note the **strategic word,** *best.* Eliminate options 1 and 2 because they are comparable or alike positions. Consider the anatomical location of the surgical site and note the words *right side* in the question to direct you to the correct option from those remaining.

Level of Cognitive Ability: Applying
Client Needs: Physiological Integrity
Integrated Process: Nursing Process—Implementation
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Disorders of Prenatal Development
Priority Concepts: Safety; Tissue Integrity
Reference: McKinney et al. (2018), pp. 963-965.

334. ***Answer:*** 3

Rationale: In esophageal atresia and tracheoesophageal fistula, the esophagus terminates before it reaches the stomach, ending in a blind pouch, and a fistula is

present that forms an unnatural connection with the trachea. Any child who exhibits the "3 Cs"—coughing and choking with feedings and unexplained cyanosis—should be suspected to have tracheoesophageal fistula. Options 1, 2, and 4 are not specifically associated with tracheoesophageal fistula.

Test-Taking Strategy: Note the **strategic words,** *most likely.* Focus on the diagnosis and think about the pathophysiology of the disorder. Recalling the "3 Cs" associated with this disorder will assist in directing you to the correct option.

Level of Cognitive Ability: Analyzing
Client Needs: Physiological Integrity
Integrated Process: Nursing Process—Assessment
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Disorders of Prenatal Development
Priority Concepts: Clinical Judgment; Tissue Integrity
Reference: McKinney et al. (2018), pp. 965-966.

335. ***Answer:*** 4

Rationale: Gastroesophageal reflux is backflow of gastric contents into the esophagus as a result of relaxation or incompetence of the lower esophageal or cardiac sphincter. Small, more frequent feedings with frequent burping often are prescribed in the treatment of gastroesophageal reflux. Feedings thickened with rice cereal may reduce episodes of emesis. If thickened formula is used, cross-cutting of the nipple may be required.

Test-Taking Strategy: Note the **subject,** gastroesophageal reflux disease. Use basic principles related to feeding an infant to assist in eliminating options 1 and 2. Noting the words *reducing the episodes of emesis* in the question will assist in directing you to select the correct option over option 3.

Level of Cognitive Ability: Applying
Client Needs: Physiological Integrity
Integrated Process: Teaching and Learning
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Gastroesophageal Reflux Disease
Priority Concepts: Client Education; Nutrition
Reference: McKinney et al. (2018), pp. 971-972.

336. ***Answer:*** 3

Rationale: Vomiting causes the loss of hydrochloric acid and subsequent metabolic alkalosis. Metabolic acidosis would occur in a child experiencing diarrhea because of the loss of bicarbonate. Diarrhea might or might not accompany vomiting. Hyperactive bowel sounds are not associated with vomiting.

Test-Taking Strategy: Focus on the **subject,** complications related to vomiting. Recalling that gastric fluids are acidic and that the loss of these fluids leads to alkalosis will assist you in answering the question. No data in the question support options 1 and 4.

Level of Cognitive Ability: Analyzing
Client Needs: Physiological Integrity

Integrated Process: Nursing Process—Assessment
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Dehydration
Priority Concepts: Acid-Base Balance; Fluids and Electrolytes
Reference: McKinney et al. (2018), p. 891.

337. ***Answer:*** 3

Rationale: Imperforate anus is the incomplete development or absence of the anus in its normal position in the perineum. During the newborn assessment, this defect should be identified easily on sight. However, a rectal thermometer or tube may be necessary to determine patency if meconium is not passed in the first 24 hours after birth. Other assessment findings include absence or stenosis of the anal rectal canal, presence of an anal membrane, and an external fistula to the perineum. Options 1, 2, and 4 are findings noted in intussusception.

Test-Taking Strategy: Note the **subject**, manifestations of imperforate anus. Use the definition of the word *imperforate* to assist in answering this question. This should direct you to the correct option.

Level of Cognitive Ability: Analyzing
Client Needs: Physiological Integrity
Integrated Process: Nursing Process—Assessment
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Gastrointestinal and Rectal Problems
Priority Concepts: Clinical Judgment; Elimination
Reference: McKinney et al. (2018), pp. 968-969.

338. ***Answer:*** 2

Rationale: In pyloric stenosis, hypertrophy of the circular muscles of the pylorus causes narrowing of the pyloric canal between the stomach and the duodenum. Clinical manifestations of pyloric stenosis include projectile vomiting, irritability, hunger and crying, constipation, and signs of dehydration, including a decrease in urine output.

Test-Taking Strategy: Focus on the **subject,** the manifestations of pyloric stenosis. Considering the anatomical location of this disorder and its potential effects will assist in eliminating options 1 and 3. Thinking about the pathophysiology of the disorder and recalling that a major clinical manifestation is projectile vomiting will assist in directing you to the correct option from those remaining.

Level of Cognitive Ability: Analyzing
Client Needs: Physiological Integrity
Integrated Process: Nursing Process—Assessment
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Disorder of Prenatal Development
Priority Concepts: Clinical Judgment; Fluids and Electrolytes
Reference: Hockenberry, Wilson, Rodgers (2017), pp. 728-729.

339. ***Answer:*** 1

Rationale: Celiac disease also is known as *gluten enteropathy* or *celiac sprue* and refers to intolerance to gluten, the protein component of wheat, barley, rye, and oats. The important factor to remember is that all wheat, rye, barley, and oats should be eliminated from the diet and replaced with corn, rice, or millet. Vitamin supplements—especially the fat-soluble vitamins, iron, and folic acid—may be needed to correct deficiencies. Dietary restrictions are likely to be lifelong.

Test-Taking Strategy: Focus on the **subject,** home care instructions for the child with celiac disease. Recalling that corn, rice, and millet are substitute food replacements in this disease will direct you to the correct option.

Level of Cognitive Ability: Applying
Client Needs: Health Promotion and Maintenance
Integrated Process: Teaching and Learning
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Nutrition Problems
Priority Concepts: Client Education; Nutrition
Reference: Hockenberry, Wilson, Rodgers (2017), pp. 732-734.

340. ***Answer:*** 4

Rationale: Intussusception is a telescoping of 1 portion of the bowel into another. The condition results in an obstruction to the passage of intestinal contents. A child with intussusception typically has severe abdominal pain that is crampy and intermittent, causing the child to draw in the knees to the chest. Vomiting may be present, but is not projectile. Bright red blood and mucus are passed through the rectum and commonly are described as currant jelly–like stools. Watery diarrhea and ribbon-like stools are not manifestations of this disorder.

Test-Taking Strategy: Focus on the **subject,** the manifestations of intussusception. Think about the pathophysiology associated with this condition. Recalling that a classic manifestation is currant jelly–like stools will assist in directing you to the correct option.

Level of Cognitive Ability: Analyzing
Client Needs: Physiological Integrity
Integrated Process: Nursing Process—Assessment
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Gastrointestinal and Rectal Problems
Priority Concepts: Clinical Judgment; Elimination
Reference: Hockenberry, Wilson, Rodgers (2017), pp. 729-730.

341. ***Answer:*** 1, 2, 5

Rationale: Hepatitis is an acute or chronic inflammation of the liver that may be caused by a virus, a medication reaction, or another disease process. Because hepatitis can be viral, standard precautions should be instituted in the hospital. The child should be discouraged from sharing toys, so playtime in the playroom with other children is not part of the plan of care. The child will be allowed to return to school 1 week after the onset of jaundice, so indefinite home schooling would not need to be arranged. Jaundice is an expected finding with hepatitis and would not

warrant notification of the PHCP. Provision of a low-fat, well-balanced diet is recommended. Parents are cautioned about administering any medication to the child, because normal doses of many medications may become dangerous owing to the liver's inability to detoxify and excrete them. Hand washing is the most effective measure for control of hepatitis in any setting, and effective hand washing can prevent the immunocompromised child from contracting an opportunistic type of infection.

Test-Taking Strategy: Focus on the **subject,** care for a child with hepatitis. Thinking about the pathophysiology associated with hepatitis and the method of transmission will assist you in answering the question. Because the infection can be transmitted to others, playing with other children in the playroom is not an appropriate intervention. Since jaundice is an expected finding, notifying the PHCP is unnecessary. Planning for an indefinite period of home schooling is not necessary.

Level of Cognitive Ability: Creating
Client Needs: Safe and Effective Care Environment
Integrated Process: Nursing Process—Planning
Content Area: Pediatrics: Gastrointestinal
Health Problem: Pediatric-Specific: Hepatitis
Priority Concepts: Clinical Judgment; Infection
Reference: McKinney et al. (2018), pp. 994-996.