The ABC’s of Gastrostomies

Rebecca Jacobson, DNP, APRN, CPNP-PC
Pediatric Surgery
Children’s Hospital Colorado
Financial Disclosure

- No relevant financial relationships with any commercial interests
Objectives

• Why are gastrostomy tubes placed?
• How are gastrostomy tubes placed?
• Identify the different types of gastrostomy tubes
• Understand the basics of g-tube care and use
• Troubleshoot common gastrostomy problems
• Manage g-tube dislodgement and removal
• Follow up care and supplies
Who gets a gastrostomy tube?

Anyone who has a functional GI tract but cannot safely eat by mouth or cannot ingest enough calories for adequate growth.
Feeding or swallowing problems

- Prematurity
- Cerebral palsy
- Congenital syndromes (i.e. Down Syndrome)
- Cleft lip and palate
- Cancer
- Short bowel syndrome
- Aspiration

- Congenital heart disease
- Chronic lung disease/BPD
- Failure to thrive
- Autism
- Congenital GI tract anomalies
- Gastroesophageal reflux
- Special diet (i.e. ketogenic)
Common Terminology

• Gastrostomy tube (G-tube) – tube through the abdominal wall into the lumen of the stomach, can be button or long tube

• Jejunostomy tube (J-tube) – tube through the abdominal wall into the lumen of the small intestine, can be button or long tube

• Gastrojejunostomy tube (GJ-tube or TJ-tube) – tube through the abdominal wall with a long tube that passes from the stomach into the small intestine, can be button or long tube
Placement of a Gastrostomy

**Surgical** – open or laparoscopic (majority of g-tubes at CHCO placed this way)

- Typically involves suturing the stomach to the inside of the abdominal wall to facilitate tract development
- Tract healing and formation takes about 6 weeks
Placement of a Gastrostomy – cont’d

- **PEG** (percutaneous endoscopic gastrostomy) – usually done by a gastroenterologist (less often placed this way at CHCO)
  - Stomach not sutured to abdominal wall, so tract formation takes longer (3 months)
Skin Level G-tubes or “Buttons”

Most common type of tube in pediatrics

Features
• Low profile design – less likely to get caught on things
• Require extension set for use
• Lots of sizes – vary in width (Fr) and length (cm)
• Balloon or non-balloon versions
• Family can change at home

Common brands
• Mini One
• Mic-Key
• Bard
• Nutriport
Long Gastrostomy Tubes

Less common in pediatric patients but sometimes used

Long tube advantages
- Greater sizing options for larger patients
- Length is adjustable with external disk/bolster
- Less equipment needed (do not need an ext. set)
Gastrojejunostomy (GJ/TJ) tubes

- A “double headed” tube inserted through one skin site
  - Gastrostomy section ends in the stomach
  - Jejunostomy section ends in the small intestine
- Can be a button (photo) or long GJ tube
- G-port – continuous or bolus feeds
- J-port – continuous feeds only
- Do NOT rotate device
G-tube Care and Use
True or False

Once a child has a gastrostomy tube placed, they keep the same size (width and length) for their lifetime.

False – the length of the g-tube is increased for weight gain.
General guidelines

Weight gain → longer g-tube

• G-tube should fit flush to the patient’s skin, with about a quarter’s width of space underneath the external flange when lifting up
• Buttons that fit too tightly can cause pressure wounds, leaking, pain, irritation, gastric prolapse and chronic thinning of the abdominal wall

Too tight

Correct fit

Too long
General guidelines

Balloon g-tubes are changed every 3-6 months

- Most families learn how to change their child’s tube and do it at home
- Steps:
  - Deflate balloon
  - Remove old tube
  - Insert new tube
  - Inflate new balloon

Non-balloon g-tubes are changed about once a year in the office
True or False

It is ok to use the syringe plunger to push a feeding through the extension set very quickly.

False – bolus feedings should be given over 15-20 minutes, even if you occasionally have to push or “bump” with the plunger due to the viscosity of the feed.

It is ok to leave the extension set hooked to the g-tube between feedings for convenience.

False – this can lead to the tubing getting caught or pulled on and site trauma or tube dislodgement.
Feeding via g-tube

Options

- Pump (continuous or bolus)
- Gravity bag bolus
- Syringe bolus
- All daytime vs. day/night combo feeds

* Nutrition/growth managed by PCP or primary specialist/dietitian

Tips

- Flush tube with water after feeding (15-30 mL)
- Change feeding bags daily
- Change extension sets every other week
- Vent air from the stomach for patient discomfort, gagging/retching, or feeding intolerance
Venting

Removes excess air/gas from the stomach

Vent if gagging, retching, leaking, crying/discomfort, or feeding intolerance are present, or if ordered
True or false – Medication administration

It is ok to insert a slip tip syringe directly into the opening of a Mic-Key or Mini button to administer a medication

False – this can damage the one-way valve

Medications should be given through the medication port of the extension set rather than mixed with formula in the syringe or bag during a feed

True – it is best practice to give medications through the medication port and then flush with water to ensure the full dose is administered
True or false – Skin Care

The skin around the g-tube site should be cleaned with alcohol wipes or half strength hydrogen peroxide daily
False – use plain water or mild soap and water

Yellow or green discharge from the g-tube site usually signals infection
False – a small amount of yellow/green mucus discharge is normal

If there is leaking around a g-tube, a wider device should be placed to “plug” the hole
False – this further stretches the site and can lead to worse leaking
Skin Care

• Clean site 1-2 times a day with warm soapy water, rinse well, pat dry

• Can apply 2x2 gauze and barrier cream around the site if needed

• A small amount of leaking or yellow/green mucus discharge is normal
Troubleshooting gastrostomy tubes
Common G-tube Problems

- Leaking from the center of the tube
- Leaking around the tube
- Skin irritation
- Skin infection
- Granulation tissue
- Bleeding around the g-tube
- Accidental dislodgement
Leaking From the **Center** of the G-tube

Caused by a stuck or broken valve

- Attempt to release stuck valve by flushing tube with warm water and connecting/disconnecting extension set
- If above unsuccessful, entire tube will need to be replaced – this is not an emergency
- If safety cap broken, then may attach feeding extension set to g-tube and clamp shut
Leaking Around the G-tube Site

What: stomach contents leak around the g-tube in an excessive amount

Can lead to skin breakdown and loss of calories

Causes:
• Poor g-tube fit – too tight or too loose
• Stretching of the stoma d/t site trauma or tube dislodgement
• Granulation tissue
• Increased abdominal pressure d/t coughing, constipation, vomiting, crying
• Deflated balloon
• Underlying GI disorder – slow motility, feeding intolerance
• Body structure (i.e. scoliosis)
Leaking Around the G-tube Site

Treatment
- Determine underlying cause
- Family must check g-tube balloon and instill correct volume of water
- G-tube size change – length only
- Protect skin with barrier cream – Desitin, Calmoseptine, Critic Aid clear, Aquaphor/Maalox, etc.
- Stabilize tube to prevent excessive movement – use “tic-tac-toe” taping method (photo)
Skin Irritation (irritant contact dermatitis)

- Skin is erythematous, excoriated, tender, weepy
- Causes: leakage of gastric contents, poor tube fit, tape, manipulation or dislodgement of the G-tube
- Treatment
  - Determine underlying cause and treat
  - Check balloon volume and device fit
  - Clean skin with soap and water, pat dry
  - Apply topical barrier such as Calmoseptine, Critic-Aid clear, Maalox/Aquaphor, or diaper cream
  - Apply 2x2 gauze or other dressing and secure with tape
G-tube Site Cellulitis

- Symptoms – skin around G-tube with spreading erythema, swelling, induration (hardness when palpating), ++ tenderness, and warmth
- +/- fever and/or purulent discharge
- Relatively uncommon, but tends to occur within 1-3 weeks of surgery
- Causes – staph and strep are common; culturing site is rarely helpful
- Without systemic symptoms, usually treat with oral antibiotics
Granulation tissue

• Beefy, moist red, pink, or sometimes pale tissue
• Assoc. symptoms – yellow/green/brown discharge, bleeding, tenderness, leakage
• Causes
  • Excessive tube movement
  • Poor g-tube fit
  • Accidental dislodgement
  • Body’s natural reaction to a foreign object
• More common in the first 3-6 months after placement, although some patients always struggle
• Treated with topical steroid cream or silver nitrate sticks
Bleeding at G-tube Site

• Causes
  — Granuloma
  — Manipulation of g-tube
  — Site trauma – tube dislodged or pulled

• Small amount of fresh red or dried blood on the gauze is not alarming nor an emergency
• If site is actively bleeding, apply pressure with gauze or a soft cloth x 5 minutes
• Bloody or coffee ground stomach aspirate is concerning and should be evaluated immediately
Stoma preservation

If a gastrostomy tube is dislodged, the site can begin to close immediately; prompt attention is important

• Using the old g-tube
  • Deflate the balloon (if it came out inflated)
  • Quickly rinse with water (if dirty)
  • Insert into stoma and tape very well in an “X” pattern

• Using Foley catheter
  • Insert into stoma 2-3 inches and tape very well in an “X” pattern

• Call parent/guardian
• Do NOT inflate g-tube/Foley balloon or use tube until parent verifies correct position
• If the g-tube surgery was less than 6 weeks ago, the parent/guardian must take student to the health care provider to verify tube position
Supplies and Follow Up

Home care company set up prior to hospital discharge
• Provides back-up g-tube kits, pump, extension tubing, bags, gauze, tape, and formula

Families should have a back up device (g-tube or Foley) with the patient at all times in case the tube comes out

Parents should be familiar with a Foley catheter and how to use it to preserve the tract in an emergency

Follow up
• 2-3 weeks post-op with surgeon
• 8-12 weeks in Pediatric Surgery G-tube Clinic for first g-tube change/education
• As needed for problems/concerns
CHCO Resources

• Pediatric Surgery Team (720) 777-6571
  — Outpatient RNs (720) 777-8858
  — Outpatient NP (720) 777-6233
  — Clinic appointment (720) 777-6571

• Wound/Ostomy nurse (720) 777-8180

• Gastroenterology Team (720) 777-6669

• G-tube class available through the Family Learning Center
  for caregivers of CHCO patients
  • EducationClass@childrenscolorado.org
References

- CHCO Inpatient Pharmacy
- Your Guide to Proper Gastrostomy Care, Kimberly-Clark.
questions