Feeding Tubes for Kids
ins and outs and everything else!

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Objectives:

• Identify different types of gastrostomy tubes
• **Recognize and troubleshoot common gastrostomy tube problems**
• Describe common management scenarios and team-based feeding tube care
Primary Placement Techniques

- Surgical
  - Stamm gastrostomy: stomach is sewn to the anterior abdominal wall.
  - Most stable tract (depending on technique)
  - Mostly laparoscopic, one night stay in hospital

- Endoscopic (GI)
  - Direct visualization of UGI tract
  - Shorter recovery, one night stay
  - Less-stable tract

- Percutaneous (interventional radiology)
Types of feeding tubes

• Long tubes
  examples:
  • PEGs (percutaneous endoscopic gastrostomy)
  • Long balloon-retention tube
  • Malecots (long soft mushroom-retention tube)
  • Advantages: quickly placed, some are long-lasting, require no special extension pieces
  • Disadvantages: difficult to stabilize, dislodgement
PEG

Balloon-retention MIC tube

Standard foley

Malecot
Skin level tubes

- Firm silicone mushroom retention, ie Bard, etc.
- Balloon retention, ie MIC, etc.

Advantages: low profile under clothing, less likely to snag and dislodge. Family can change the balloon retention g-tubes

Disadvantage: Bard is painful to change and requires a provider to change
Bard button vs. Mickey gastrostomy
Bard extension pieces
Venting the Bard button
Mickey extension pieces
Mickey feeding extension piece locks into place
Post-surgical site care

- Check for redness, tenderness, swelling, irritation
- Wash around the g-tube daily with mild soap and water to remove crusts and drainage and pat dry
- No soaking in a bath for one week
- Minimal movement is best
- NPO overnight and begin feeds next day
Crusty drainage common around exit site
Troubleshooting common gastrostomy problems

• Most problems are common and typically respond to local measures.
• Problems are low-acuity, and can be dealt with at home
• Caregiver education enhances competence and problem solving
Leaking around the gastrostomy

- Appropriate fit?
- Balloon inflated or broken?
- Enlarged tract?
- Motility?
- Sick?
- Ability to heal (on steroids, chemo)?
- Granulation?
Redness from leaking
Appropriate fit

- Want 3-4 mm of room between skin and device
- Air should be able to circulate under tube
- Increase length as child grows/gains
- Too tight causes erosion in and out
Body habitus: current length 2.3 cm.  Tract 3.0cm
Measuring the tract (gastrocutaneous fistula)

- Mic stoma measuring device
- Place in tract, move flange down few mm above skin
Enlarged tract

• Remove gastrostomy
• Place foley cath 2 french sizes smaller
• Allowing tract to contract down
• Replace current tube
• Vigilant skin care while foley in
After a few weeks of stabilization
Leaking through the center hole (where feeds delivered)

- Valve malfunction
- Bard button: place feeding piece and 60 ml syringe, pull back
- Gastrostomy needs to be changed
- Not an emergency
- Can keep feeding connection piece plugged in as a temporary measure
Leaking: Skin care

- Protect the skin
- Apply barrier cream (zinc oxide)
- Do not recommend antibiotic ointment or Vaseline as a barrier
Apply dressings to wick moisture away from skin
Followed by foam dressing (polymem) or split gauze
Leaking: Yeast loves warmth and moisture

- Place antifungal cream 3-4 times a day
- Place directly to skin followed by the barrier cream
Post-operative “key hole”

- Want wound to granulate in around tube
- Do not use new tube until healed
- Use aquacel around base
- Stabilize tube: more movement, longer healing time: future leaking
Stabilize!!!
Hypergranulation Tissue ("proud flesh")

- Overgrowth of fibroblasts and epithelial cells
- Beefy red, friable, moist and painful
- Common (67%)
- Bleeds, yellow, green drainage
- Can misplace G-tube
Hypergranulation tissue: Simple rules

- Keep skin clean and dry
- No tension or friction to the site
- Incorrect fitted device can exacerbate tissue
- Often recurs if cause not remedied
Hypergranulation tissue: Treatment

- Steroid cream
- Silver nitrate cautery sticks
- Surgical excision
Hypergranulation tissue: Treatment

• Apply 2 times a day for 2 weeks or less if gone
• Give 2 weeks off between therapy
• May need several intermittent treatments
Hypergranulation tissue: Treatment

- Apply barrier cream around granulation
- Touch granulation with stick, tissue turns grey and sloughs
- Use every few days until gone
- May need to reapply cream to prevent burn
Infection: Uncommon but can be serious

- True infection (cellulitis)
  - Red, spongy, firm and tender skin with pus or purulent drainage, feathering erythema.
  - Treat with systemic antibiotics (cephalexin/augmentin)
  - Topical ineffective.
Infection

- If purulent drainage present send for culture
- Change abx therapy as needed
- Admit for IV abx if extensive cellulitis
**Dislodged g-tube**

- Skin level, balloon retention g-tubes can be dislodged with balloon intact, most likely if balloon broken
- Bard much more difficult to become dislodged, but have had a few children pull them out
- Tract will close or contract within hours, must replace g-tube or place foley
- Carry back-up g-tube (trips, school, etc)
?’s I ask when changing a gastrostomy

- Who placed the tube?
- When was it placed?
- What placement method was used?
- What kind of tube is present?
- Is this a stable tract?
- Can I change this tube safely?
- How do I ensure this newly replaced tube is safe?
How do I dilate a gastrocutaneous fistula?

- Start small, increase dilators as able, 2% lidocaine jelly as lubricant
- Different dilator options: Self-cath available in CS (starts at 5 fr.)
- Smallest Mickey g.tube 12 fr. Do not need to replace original size
- Check placement x3
- Will need new script for homecare company
If I’m worried

- Increased resistance met while placing
- Young tract
- Had to dilate tract due to dislodged g-tube
- More than usual pain
- Bleeding
Broken G-tube

- Most often the cap
- Older Bard buttons will crack in the stem and cause leaking
- Part of the cap will break and lodge into the stem, causing obstruction
- Usually not an emergency and can be changed in clinic, unless obstructed and patient needs feeds or medications
- Balloon retention tubes can be changed by family if they have been trained and tract is mature.
Clogged G-tube

- Due to feeds and medication build-up on the valve
- Involves flushing tube with water, if ineffective then use activated pancrelipase.
- Useful for g/j tubes as they frequently clog
Changing a g-tube

- Don’t attempt unless you’ve been trained!
- Balloon retention MIC, etc
  - Changed at home usually
  - Less uncomfortable to change
  - Family and caregivers trained to replace
- Rigid (mushroom) retention—Bard, etc.
  - Changed in a specialty clinic due to increased risk of separation or perforation
  - Uncomfortable to change
  - Can require sedation/anesthesia
Standardized approach to feeding tubes

- When to refer
- How to refer
- The team approach
  - Feeding tube medical home
  - Nutrition planning and follow-up
  - Oromotor therapy and follow-up
  - Home care equipment
  - Weaning to oral independence
Research in pediatric enteral care

EMPOWERMENT
“Focusing on self-reliance”
“Don’t need to come to ED unless THIS happens”
“Knowing when it is a true emergency.”

EDUCATION
“Giving guidance”
“Specific parameters”
“Multiple exposures to education”
“Standardized approach”
“Consistency”

AVAILABILITY
“Open office hours”
“Availability of specialty nurses”
“Having a number to call”
“Contact person”
“Troubleshooting”
References

• American Pediatric Surgical Nursing Association, Pocket Guide to Pediatric Surgical Nursing, 2008 by Jones and Bartlett Publishers, Inc.

• Wound Ostomy and Continence Nurses Society, Management of Gastrostomy Tube Complications for the Pediatric and Adult Patient, 2008
Questions?