All About Gastrostomy and Jejunostomy Tubes

Nursing Grand Rounds
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Disclosure Statement

- We do not have any conflict of interest or will be discussing any off-label product use.
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Objectives:

- Identify different types of enteral tubes placed at Seattle Children’s Hospital
- Explain enteral tube management
- List methods to troubleshoot common feeding tube problems
- Identify communication strategies to help ensure effective teamwork and patient safety

What is a gastrostomy?

- Creation of a new opening into the stomach, and insertion of the feeding tube.
- Stomach structure and function need to be normal (no reflux or outlet obstruction)
- Method of placement and choice of tube determined by Child’s needs

Primary Placement Techniques

- Surgical
  - Stamm gastrostomy: stomach is usually sewn to the anterior abdominal wall
  - Most stable tract (depending on technique)
  - Most often laparoscopic
- Endoscopic (GI)
  - Direct visualization of UGI tract
  - Less-stable tract
  - PEG tubes changed in OR
- Percutaneous (interventional radiology)
  - Gastrojejunostomy
Primary Placement Techniques

- **PEG**: Balloon-retention MIC tube
- **Standard Foley**: Malecot

Long Enteral Tubes

- **Skin level tubes**
  - **Bard**: Firm silicone mushroom retention
  - **MIC-KEY**: Balloon retention

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

Disadvantage: Bard is painful to change and requires a provider to change
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 1 week
- Minimal movement is best
- Feeds resumed day after surgery

Crusty drainage not uncommon around exit site
Oral health and developmental needs

- Continue dental care, even if not taking feeds orally (regular dental check-ups)
- Infants: encourage holding during feeds and practice oral skills
- Toddlers: protect g.tube, distract during site care, include child in family meals
- Older child: encourage responsibility of g.tube care as able, and promote normal activities: sports and friendships

Troubleshooting common gastrostomy problems

- Most problems are common and typically respond to local measures.
- Are low-acuity, and can be dealt with at home
- Pre-operative teaching enhances caregiver competence and problem solving

Leaking from around the gastrostomy

- Appropriate fit?
- Balloon inflated or broken?
- Enlarged tract/Erosion?
- Motility/Sick?
- Pyloric obstruction?
- 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 3.0 cm
Measuring the tract (gastrocutaneous fistula)

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

Enlarged tract

- Remove gastrostomy
- Place smaller tube
- Stabilization
- Vigilant skin care
- Place ND tube
- Never upsize tube (French size)

After a few weeks of stabilization
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!!!

G-tube protective belt by Benik Corporation
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
- Dimethicone
- Cavilon, no sting barrier wipe
- Coconut oil
- Provider/patient preference

Followed by foam dressing (polymem) or split gauze
Apply dressings to wick moisture away from skin.

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 exasperate tissue
- Often recurs if cause not remedied
Hypergranulation tissue: Treatment

- Steroid cream
- Silver nitrate cautery sticks
- Surgical excision

Hypergranulation tissue: Treatment

- Apply 2-3 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 lidocaine 2% jelly prior to application
- Apply barrier cream around granulation
- Touch granulation with stick, tissue turns grey and sloughs
- Use every few days until gone
Video Example

Prolapse of Gastric Mucosa

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 most commonly). 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)

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.
**Questions 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?

**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

**Changing a g-tube**

- Don’t attempt unless you’ve been trained!
- Balloon retention MIC, etc.
  - Changed at home usually
  - Less uncomfortable to change
- 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
When a tube is no longer needed

- Options for removal
  - Primary team decides if tube is removed
  - Prefer tube not used for 3 months
  - If tube less than 12 months old, >50% chance of closing on its own
  - If site does not close will need surgical closure of gastrocutaneous fistula

Who do I call?

References

- American Pediatric Surgical Nursing Association, Nursing Care of the Pediatric Surgical Patient, 2013 by Jones and Bartlett Publishers, Inc.
- Wound Ostomy and Continence Nurses Society, Management of Gastrostomy Tube Complications for the Pediatric and Adult Patient, 2011
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I HAVE NO RELATIONSHIPS TO DISCLOSE REGARDING THE CONTENT OF THIS PRESENTATION

G J Tubes

Objectives:
--Familiarization with IR G and GJ tubes
--Familiarization with IR placement of G and GJ tubes
--Initial post surgical care
--Urgent and routine follow-ups
--Stoma site care
Standard initial placement tube for G or GJ
16fr. CoreFlow G tube with Marx-Cope 8.5fr J tube as needed

We feel this is the best GJ system for use with smaller children for an initial placement.
The MIC Gastroenteric, with a 6fr J is not a tube used in IR.

**G J Tubes**

**Initial placement**

1. Barium through NG tube night prior
G J Tubes

Initial placement

2. Outline liver with Ultrasound

3. Place OG tube
G J Tubes

Initial Placement

4. Place snare
G J Tubes

Initial Placement

5. Give glucagon

G J Tubes

Initial Placement

6. Add 60cc-100cc air to stomach, and make incision
MIC KEY GJ TUBE
Multiple sizes
14fr, 16fr, 18fr

Multiple stoma lengths
1.5cm, 2.0cm, 2.3cm, 2.5cm, 3.0cm, 3.5cm

MIC TransGastric GJ tube
Used if stoma length greater than 3.5cm or pt preference or Stoma site problems:
- Infection at site
- Need larger balloon
G J Tubes

In our experience, this GJ tube system is not durable and the 6 fr. J tube frequently clogs.

G J Tubes

Standard post surgical care

NPO and nothing by tube 8-12 hours after tube placement secondary to the ileus that we create by placement of the tube as well as the glucagon we give to cause a temporary ileus.

ENSURE BS BEFORE START FEEDS!!!

G J Tubes

Standard Post Surgical Care

Initial placement may result in erythema, edema and possible infection. Usually due to leakage around the tube at the ostomy/stoma site. Can last for up to 2-3 wks.

CLEAN DAILY!!! (stomach acid)
**Standard Post Surgical Care**

H tape for first week to 10 days, longer as needed.

--Helps the stoma site heal correctly, if tube is pulled off to side, can cause a keyhole deformity which increases chances of infection.

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**G J Tubes**

Standard post surgical care

- If concerns for infection at the new stoma site, can use Bactroban topically or Keflex (cephalexin) through the G port of tube. IR will follow up in one week and as patient requires.

- Nursing staff sometimes will use a skin protective paste around the tube if gastric leakage, Cavalon or
  - MYLANTA/MAALOX!!!

- If continued problems obtain culture, treat appropriately and contact IR
Granulation tissue

Growth of excess, moist pink-red tissue protruding from the stoma site
This tissue may bleed easily, pain
Can be treated with Silver nitrate or Triamcinolone Cream

G J Tubes

Standard Post Procedure care

Initial tube in place for 2 months on a Non-Cardiac patient and 3 months on patient with a Cardiac history
This allows for maturation of the ostomy tract and minimize risk of gastric leakage into the peritoneum
We feel that any child under 16 months should not be changed to a low profile tube as the J tube is too large and sometimes may cause pyloric obstruction
G J Tubes
“Care and Feeding” of the tube
If continual feeds, (anywhere from 16 to 24 hours) needs to be flushed every 4 to 6 hours. Tubes will get deposits which will eventually clog it up.

Medication administration:
--Stop the feeds
--Flush Flush Flush!! 10-15cc
--Give the medication (If solid med, crush to a fine power, add warm water)
--Flush Flush Flush!!
--Restart the feeds

G J Tubes
Urgent return to the Hospital:
• Tube dislodged before mature tract (within 6 to 8 weeks of initial placement, 12 wks for cardiac pts)
• Feeding into peritoneum/ peritonitis
• Feedings coming back through the G port or around stomas
• Blockage of tube, regurgitation
• J tube curled in stomach
  --vomiting, aspiration risk, medications

G J Tubes
Experience has taught us that GJ tubes last the longest with those parents that consistently flush the G and the J tube AND those that flush before and after EACH medication given. Some med combos “fuse” with the formula and make “playdough” clogging the J tube
This was squeezed out of a J tube after a medication administration.

Consistency of playdough

Why is this important???

You will, most likely, have to care for a patient with a G or GJ tube, especially important for meds and hey, everybody’s gotta eat!

If clogged, unable to place wire for easy replacement, entire J tube has to be pulled, patient from previous slide needed anesthesia to replace.

Simple things (lack of flushing) can have significant consequences (anesthesia risks and radiation exposure)

G J Tubes

Mic Key GJs and NG/ND/NJ tube difficult to de-clog d/t silastic material. Mostly, if clogged, must be changed out

New GOC for de-clog with pancrelipase using multiple different syringe sizes. Best chance of de-clog with smaller syringe→ more pressure!

Coreflow/J tube could previously be de-clogged with special luer lock adapter. However, this is no longer used as it does not have an enteral tip.
G J Tubes

- Non Urgent routine problems:
  - Balloon rupture
  - Tube occlusion (meds, feeds, FLUSH!!!)
  - Excessive leakage
  - Ensure that you vent the G, especially if regurgitation

G J Tubes

- G J tube follow-up or routine change
  - Do not need to be NPO
  - Follow-up in clinic in week to 10 days, if initial placement
  - If G tube only and established tube, can be done at home, clinic, ER, etc
  - If GJ change, contact IR
  - Mic Key GJ on average can last 3 to 4 months
  - If CoreFlow/Marx Cope GJ, both can last up to year
  - G only, easily lasts a year, sometimes longer

QUESTIONS?

COMMENTS?

CONCERNS?
The End