Agenda

12:00   Welcome
12:05   G-Tube Home Care – Arlene Lovejoy
12:35   Enteral Feeding: Overview and Practice Guidelines – Sara Swindle
1:05    Questions & Answers
1:30    Conclude
Arlene Lovejoy, CNS

Arlene Lovejoy, MS, RNP, CNS, RNC-NIC, C-NPT, RRT has worked for 34 years in neonatal and pediatric health care, and currently is the Clinical Nurse Specialist at LAC+USC Medical Center. Arlene oversees the discharge planning from the NICU and acts as a resource to pediatric clinics and the surrounding community’s pediatric acute care services.
G-Tube
Home Care

Arlene Lovejoy, CNS
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Common Parts

- **Internal anchor**
  - Mushroom tip
  - Balloon

- **External anchor**
  - Disc
  - Tape/gauze bolster

- **Length of tubing**
  - Varies with device

- **Clamp**
  - Optional
  - Soft is more desirable
    - Rubber band

- **Adaptor end**
  - Connects to feeding tube

Corpak® or Mic-Key® brands
Common Parts

- **Foley Catheter**
  - Balloon as internal anchor
  - Varies in diameter as child varies
  - Two external ports
    - One with valve to the balloon
    - One without valve for feeding/draining
  - Needs “adaptations”
    - Tape/bolster
    - Connector device
Common Parts

- **Mic-Key® “Button” or Low-Profile Gastrostomy Feeding Tube**
  - Balloon as internal anchor
  - One-way value in place of clamp
  - Varies in diameter and length as child varies
  - Snap-on tubing connects to feeding tube
Common Problems

- “Pops out”
  - Urgent care?......
  - Back-up tube
    - Same diameter size Foley
  - Prevention
    - Stockinette
    - Onsies on smaller kids
STOCKINETTE:
An elastic knitted fabric used especially in making undergarments, bandages, and babies' clothes.

http://www.comfortoandp.com/
Onsies

I'm here!

...so when does my pony arrive?
Common Problems

- **Skin Care**
  - Daily care
    - Cleansing
      - Remove moist goo (no smell)
      - Soak crusting to remove (half hydrogen peroxide)
    - Quarter turn of tube in the stoma
    - Gauze pad/bolster and taping
  - Creams and ointments
    - Avoid ointments with latex/rubber
  - Home remedies
    - See Resources

See Resources
Common Problems

- **Infections**
  - Redness
  - Separate red spots at the edge of the redness
    - Possible yeast infection
  - Pus (smells)
    - Antibiotics

- **Granulations**
  - Moist light pink extra tissue
  - Usually controlled with silver nitrate sticks
Infection or Irritation?
Common Problems

- **Leaks**
  - At the stoma opening
    - “Normal” growth of child?
    - ~Monthly routine replacement of tube
  - At the connection to the feeding tube
    - Rubber band or new connecting set
  - Internal valve or external “clamp”
    - Rubber band
  - Internal balloon
    - Withdraw water weekly in syringe and replace
Common Problems

- **Tube Migration (with Foley-types)**
  - Measure length of tube regularly
  - Pull back on tube gently to seat balloon against to stomach wall.
Plugging/Clogging

- **Prevention**
  - “Flush” with small amounts of water or air after feeding/medications

- **Home remedies (use w/ caution)**
  - Discuss with pediatrician/nurse practitioner
  - Coca Cola
  - Seltzer
  - Meat tenderizing
  - Baking soda
Resources

General Care -- Spanish
http://www.cincinnatichildrens.org/visit/spanish/info/abdomen/home/g-tube-care.htm

General Care -- English
http://www.cincinnatichildrens.org/health/info/abdomen/home/g-tube-care.htm

Care Tips from Parents:
http://hydranencephaly.com/Care/tipsandtricks.htm
More Resources

**Manufacturers:**
http://www.mic-key.com/index.asp

**Stockinette:**
Sara Swindle, MS, RD

Sara has been a dietitian in home care for almost 4 years with Shield Healthcare. Her specialty lies in in-home enteral nutrition support. She sees both children and adults and provides education on home enteral equipment use and proper nutrition.
Enteral Feeding: Overview and Practice Guidelines

Sara Swindle, MS, RD
Shield Healthcare
Los Angeles, CA
July 21, 2010
Objectives

1. Identify feeding tubes
2. Identify appropriate feeding regimens
3. Recognize proper formula preparation, storage, and hang times
4. Explain safe enteral feeding precautions
5. Discuss transition to oral feeding
Enteral Access Options

- Nasogastric Tubes
  - short term feeding
  - pre-term infants
- Percutaneous Endoscopic Gastrostomy (PEG)
  - outpatient vs inpatient surgery, local anesthesia
  - requires:
    - functional stomach
    - free from obstruction or fistula
Enteral Access Options

- Gastrostomy tube (G-tube)
  - surgical placement in operating room
    - contraindication to placing PEG
    - may be placed during concurrent surgery
  - infants and children
- Balloon gastrostomy
  - Placed after established stoma site
  - Low-profile option
Low Profile Tube
Enteral Access Options

• Jejunostomy tube
  – surgically placed
  – gastric outlet obstruction, gastroparesis, severe reflux/aspiration of gastric contents

• PEG Jejunostomy tube (PEGJ)
  – tube placed via gastric site with tubing extension into jejunum
  – may need more adjustments/hospital stays due to tubing displaced from jejunum up to stomach
When to Start Tube Feedings

- **NG/NJ**
  - as soon as placement verified
- **PEG (current recommendations)**
  - 2 hrs adults
  - 6 hrs in infants/children
  
  Previous recommendation: wait 24 hrs

- **Surgical placement G/J tubes**
  - initiate feedings within 24-48 hrs
  
  Previous recommendation: waited for flatus or BM post-op
Appropriate Feeding Regimens

• NG or G-tubes
  - Bolus
  - Gravity
  - Pump infusions

• J-tubes
  - Most require pump infusion

• Bolus/Gravity vs. Pump
  - Bolus/gravity – ambulatory, more freedom
  - Pump – longer infusion times, equipment
Feeding Regimens

- Bolus feedings
  - use syringe (with or without plunger)
  - 10-20 min/fdg
- Gravity feedings
  - use gravity bag
  - 30-60 min/fdg
- Pump feedings
  - feeding times varies based on pump rate & goals
Feeding Regimens - Children

• **Bolus/Gravity**
  - start with 25% of goal volume
  - divide into number of daily feedings
  - increase by 25% per day as tolerated until at goal

• **Pump**
  - 1-2mL/kg/hr, advanced by 0.5-1mL/kg/hr q 6-24 until goal
  - “Pre-term, critically ill or malnourished children may require lower initial volume of 0.5-1mL/kg/hr”
Preparation of Formula

• Bottled or distilled water standard
  – Sterile water for immunocompromised infants

• Controlled conditions for reconstituting powdered formulas
  – clean work area
  – proper hand washing to elbows
  – avoid cross-contamination of utensils
Storage of Formulas

• Unopened liquid formula should be stored in dark, dry and cool conditions

• Breast Milk
  - use or refrigerate up to 48 hrs of expression
  - otherwise freeze, use within 3 months

• Reconstituted powder formulas
  - use or refrigerate immediately within 24 hrs
  - only 4 hrs at room temp
Hang Times for Formula

- Reconstituted powdered formula + modulars
  - 4 hours
- Breast milk
  - 4 hours
- Neonates & immunocompromised of any age
  - 4 hours
- Canned formula in open system
  - 8 hours
  - up to 12 hrs if continuous feeding
- Sterile formula in closed system
  - 24-48 hrs
Precautions for Safe Feedings

• HOB elevated to 30-45°
  – help prevent aspiration/pneumonia

• If cannot elevate HOB
  – pt laying flat but entire bed angled so head elevated
Safe Feedings

• Why do Tubes Clog?
  – Slow feeding rate of calorie-dense or fiber-containing formula (sediment)
  – Small diameter (French size) of tube
  – Inadequate flushing
  – Improper administration of meds
Safe Feedings

• Prevention of Clogging - Flushing
  - Pump Feeds Adult: 30 ml water flush every 4 hours
  - Bolus Feeds Adult: before & after each feeding
  - Pump Feeds Pediatrics: Flush every 4-6 hours
    • <10 years of age = 1mL per year w/ 3mL minimum
    • >10 years of age = 10-30mL
  - Bolus Feeds Pediatrics: Before and after feeds/meds
    • Follow your doctor’s recommendations for amount
Safe Feedings

• Clean tops of cans and shake well before opening

• Proper Medication Administration
  - Do not add meds directly to formula
  - Administer each medication separately
  - Flush w/ 15mL w/adults before & after each med
  - Flush w/ at least 3-5mL w/ pediatrics unless fluid restriction indicated
Safe Feedings

Proper Med Administration (cont.)

• Liquid meds when possible
• Enteric / film-coated meds
  – Don’t crush
  – Clump when diluted

Note: Sweeteners & stabilizers in liquid meds can increase osmolality and cause diarrhea
Safe Feedings

Proper Med Administration (cont.)

• Crushing meds
  - Fine powder mix
  - Use sterile water if indicated
  - Do not crush modified-release meds (less effective dose vs. excessive dose release at 1 time)

• Hard gelatin capsules
  - Open capsule & mix with water
Safe Feedings

Unclogging tubes
- Use warm water
- No data shows that carbonated beverages work better
Safe Feedings

Gastric Residual Volume (GRV) – when to check and how much residual volume is too much

GRV for Acutely Ill Pediatrics
• Continuous feedings
  - check GRV q 4 hrs
  - hold TF if GRV is ≥ feeding rate
• Bolus feedings
  - check GRV before feedings
  - hold if volume > ½ previous feeding volume

No general guidelines listed for stable peds
Transitioning Feeds

- Feeding tubes removed when eating well by mouth and growing well for several months
  - Outpatient removal
  - Protect skin w/ gauze and barrier cream, heal on its own
- Allow infant or child to have pleasant sensations during meal times
  - hold during feedings
  - suck on a pacifier
  - sit in a high chair
- Breast feeding, bottle feeding, solid diet
  - Combination feeds
  - Modified diet
  - Ask your nurse or doctor about therapy to help w/oral skills
Take Home Knowledge

• Three feeding access sites
  - NG, G- and J-tubes
• Three administration methods
  - bolus, gravity & pump
• Specific guidelines available for preparing, storing and using formulas
• Precautions for safe enteral feedings
• Advice for transitioning feeds
Thank You

Shield Healthcare
1 800-372-6205
www.shieldhealthcare.com

Reference:
ASPEN -American Society of Parenteral and Enteral Nutrition
ASPEN Enteral Nutrition Practice Recommendations: *JPEN J Parenter Enteral Nutr* 2009; 33; 122 originally published online Jan 26, 2009