Care of the Surgical Neonate: Gastrostomy Placement

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Objectives

• Understand the specialized care of the surgical neonate and the role of the NICU nurse in that care
• Describe three methods of GT placement
• Discuss Enfit changes to tube connections
The surgical neonate
The surgical neonate

• 2-3% major birth defects
• NICU nurses must recognize and respond needs of baby and family
• Multidisciplinary team and the NICU nurse runs the show
The parents and prenatal testing

- Suffer grief and loss of perfect baby
- Prolonged anxiety and fear
- Time to prepare for birth
- Consult with specialists
- Arrange transport
- Parents find consistent multidisciplinary communication is helpful (Askelsdottir et al., 2008)
The decision

• Difficult for parents
• Need to discuss pros and cons
• View GT as deteriorating condition
• Failure as parents
The preoperative neonate

• Stabilization and constant assessment

• CV status
  – Safe and successful anesthesia and procedure
  – Transitioning from fetal to neonatal circulation

• Respiratory status
  – TEF
  – Diaphragmatic hernia
  – Abdominal wall defects
The preoperative neonate

- Thermoregulation
  - Cold stress results in increased M&M
- Large skin defects such as omphalocele and gastroschisis, neural tube defects compound losses
- Heat losses exaggerated in the premature baby
The preoperative neonate

• Neutral thermal environment
  – Warmer, isolette
  – Preheated OR
  – Preheated linens, solutions, wraps, hat
• Key is constant monitoring
The preoperative neonate

• Fluid and electrolyte balance
  – Newborns lose 5-15% of body weight
  – Metabolic rate is double
  – Water requirements 5X greater
  – Sodium excretion only 10%

• Premature babies <1500 grams
  – Rapidly changing fluid requirements
  – Fluid increases risk for persistent PDA (Jones et al., 2011)
The preoperative neonate

• Increased nutritional demands
  – High metabolic rate
  – Rapid growth and development
  – Limited nutritional stores

• Surgical neonates
  – Nutrient losses from surgery
  – Increased caloric demands for healing
  – Compromised GI system
The preoperative neonate

- Small stomach
- Delayed gastric emptying
- Decreased intestinal motility
  - More pronounced postoperatively
- Digestive enzymes decreased
  - Immaturity or comprise of the gut
- Decreased immunity and wound healing
The preoperative neonate

- Expected weight gain 20-30 gms per day

- “If babies are not gaining they are not maintaining, they are losing”
  - Michel Nahmad, MD, pediatric surgeon

- Parenteral nutrition
Feeding and immunity

- Maintenance of gut integrity
- Barrier function promoted
- Increased secretion of mucous, bile, IgA
- Increased peristalsis and blood flow
- Decreased ventilation days
- Decreased LOS in ICU
Duodenal and jejunal villi
Indications for GT Placement in Neonates

- Neurological problems
- Congenital defects
- Metabolic disorders
- Cardiac
- Short bowel
GT Placement
Abdominal Wall Anatomy

Balloon Type Device

Mushroom Type Device
Types of GTs

- Malecot
- Pezzer/de Pezzer
- Foley Catheter
- Dome or Mushroom /PEG Tube
- Long Balloon/High Profile
- Skin Level Balloon/Low Profile
- Skin Level Non-balloon
Foley GT Tubes
Long or high profile GT
Skin level or low profile GT
Non-balloon GT
GT Placement

- Open GT or Stamm procedure
- PEG
- Laparoscopic GT
- Lap PEG
Normal GI anatomy

• Stomach is not close to abdominal wall
Open GT

• Advantages?
• Disadvantages?
• Percutaneous Endoscopic Gastrostomy
  – Long tube
    • Balloon
    • Mushroom/Dome
  – Primarily Placed Button
    • AMT Mini 1
    • Mickey
PEG Procedure

- Percutaneous Endoscopic Gastrostomy
  - Push
  - Pull
PEG Tube

- Used mainly by GI
- No T fasteners or U sutures
- Used with pull method
PEG push method

- Usually long tube
- T-fasteners used
Laparoscopic GT

- Uses laparoscope to visualize inside abdomen
- Does not visualize inside stomach
- Insufflates abdomen, not stomach
- Needs U-stitch or T-fasteners
- Most surgeons use skin level tube
Postoperative care

• All preop factors taken into consideration
• Abdominal distention
  – PEG: stomach insufflation, GT open to gravity
  – Lap: abdominal insufflation, body absorbs
Postoperative care

• Keep site clean and dry
• T-fastener care with saline
  – Remove on day 5-7
• U-stitch care with saline
  – Remove on day 5-7
• Decrease movement of tube and feeding set
  – Duoderm and tape
  – Spandex
  – New product coming
Postoperative care

• Family teaching
  – Begin immediately
  – Have parents observe, then assist with care

• Three factors:
  – Flushing after feeding and meds
  – Daily bath with tube underwater
  – Decrease movement
Postoperative care

• Surgical neonates need highly specialized care
• Neonatal nurses play a crucial role in this care
• Family support is the responsibility of entire team
GEDSA

• **Global Enteral Device Supplier Association**
• International standards for connections for feeding devices
• Enhance patient safety
• Facilitate communication
ENFit by a different name

ISO 80369-3

“The Enteral ISO Standard”

“FDA Required Connection”
“ENFit” is not the first time ISO has involved itself in enteral connections

- ISO 18250-3
- Somewhere between 2012 - 2013
- “ENPlus” Spike System
ENFit is NOT...

Designed by AMT

(AMT had no input in this standard)

ENPlus

ENLock
How will AMT’s Devices be affected?

NO CHANGE!
ISO 80369 – Adapter Changes

Tentative Timeline for Phase In

Current → Transition → Final
Administration Sets:
Questions
References


References
