Gastrointestinal Intubation

Intubation into GI Tract

Placement Methods

• Orogastric
  – Mouth to Stomach
• Nasogastric
  – Nose to Stomach
• Nasointestinal
  – Nose to Small Intestine
• Transabdominal
  – Through Abdomen to Stomach or Jejunum

Purposes

• Gavage
  – Provide Nourishment
  – French: “To Stuff”
• Deliver Oral Medication
  – NPO / Dysphagia
• Lavage
  – Remove Substances From Stomach
  – French: “To Wash”
• Decompression
  – Remove Gas & Liquid From Stomach or Bowel
• Compression
  – Control Gastric Bleeding
Tube Characteristics

- Proximal & Distal Ends
- Sized Per French Scale (F)
- Single, Double, Triple Lumen
- Identified by Location
  - Insertion
  - Distal Point

Orogastric Tube

- Ewald
- Mouth to Stomach
  - Larger Lumen Size: 36-40 F
- Emergency Situations
  - Ingestion of Toxic Substance / Overdose
- Multiple Distal Openings

Nasogastric Tube

- Nose to Stomach
- Plastic or Silicone
- Levin / Dobbhoff
  - Single Lumen 8-18F
  - Gavage, Decompression, Diagnostics
- Salem Sump
  - Double Lumen 14-18F
  - Decompression, Feeding
  - Pigtail Vent
### Complications of NGT

- **“Necessary Evil”**
- **Pain:** Nose, Throat, Ear & / or Jaw
- **Irritation or Breakdown of Mucous Membrane Tissues**
- **Gastric Reflux**
  - Dilation of Esophageal Sphincter
- **Aspiration**
  - Liquids Enter Airway

### Nasointestinal Tubes

- **Keofeed**
  - Gavage
  - Smaller Diameter: 8F
  - Weighted Tip
- / Miller Abbott
  - Intestinal Decompression (Small Intestine)
  - 16-18F
  - Weighted Tip
  - Ileus / Early Small Bowel Obstruction (SBO)

### Nasogastric Tube (Compression: Esophageal Varies)
Transabdominal Tubes

- Placed GI Lab / Surgery
- Gastrostomy (G-Tube)
  - Gavage
  - Decompression for Patients with J-Tube
- Jejunostomy (J-Tube)
  - Gavage
- Percutaneous Endoscopic Gastrostomy (PEG)
  - Gavage
- Percutaneous Endoscopic Jejunostomy (PEJ)
  - Gavage
- Feeding Button
  - Gavage

Need for Transabdominal Tube

- Alternative to Oral Feedings
- Generally permanent
  - Documented Aspiration- CVA
  - Esophageal Abdominal Cancer
  - Chemotherapy
  - GI Disorders

NGT Management

- Insertion
  - Need Doctors Order
  - Patient Preparation Key: Signal to Pause
  - Anxiety: “You are Going to Put What Where?”
  - Explanation: Calm and Simple Manner
  - Need Control of Situation
Assessment

• Level of Consciousness
• Weight
• Bowel Sounds
• Abdominal Distention
• Integrity of Nasal & Oral Mucosa
• Ability to Swallow, Cough, & Gag
• Presence of N/V
• Baseline for Future Comparisons
• Modify Procedure / Equipment

Nasal Inspection

• Main Goal
  – Determine Which Nostril to Use
  – Length of Insertion
• Ascertain
  – Nasal Polyps
  – Deviated Septum
  – Fractured Nose
  – Narrow Nasal Passage
  – Recent NGT

Tube Measurement

• NEX
  – Nose
  – Earlobe
  – Xiphoid Process
• First Measurement
  – Distance Between Nose to Earlobe
  – Distance to Nasal Pharynx
  – Places Tip at Back of the Throat
  – Above Gag Reflex
Measurement (Cont.)

- Second Measurement
  - Distance Between Earlobe to Xiphoid Process
  - Depth Required to Reach Stomach
- 4 Black Marks
  - Measurement Guide
    - Usually Between 2 & 3
  - Placement Guide
    - Continuous Assessment

Goal of NGT Insertion

- Stay Calm
- Decrease Patient Discomfort
- No Tissue Damage
- Correct Placement

NGT Placement

- Explain Procedure to Patient
- Head of Bed Elevated to Sitting Position
- Sip Water / Swallow Ice Chips
- Lubricate Tube
- Follow Gravity Principle
- Calm Reminders to Swallow
- Be Alert for Signal to Pause
- Secure to Nose
- Placement Verification
Placement Verification

• Aspirating Stomach Contents
• Auscultation Over Stomach
• pH Testing of Aspirated Fluid
• Abdominal X-Ray
• Secure Tube

Use & Maintenance

• Gastric Decompression
  – NGT Connected to Suction (20-40 mm Hg)
  – Intermittent / Continuous
  – Wall Unit / Portable Machine
  – Can Disconnect for Ambulation / Medication
  – NPO / Ice Chips
  – Assessments
  – Irrigation
  – Equipment Check

Suction Units
Use & Maintenance (Cont.)

• Enteral (Intestine) Nutrition
  – Nutrition Directly to Stomach / Small Intestine
  – Best Way to Receive Nutrients
  – NGT: Short Term
  – Nasointestinal / Transabdominal: Long Term

Enteral Feeding Pump

NGT Removal

• Patient’s Condition Improves
• Tube Obstructed
• Change Policy Per Manufacturer / Hospital Protocol
• Passed Trial Period
• Daily Diet & Abdominal Assessments
Nasointestinal Management

- Similar to NGT
- Determine NEX Measurement and Add 9 Inches
- Verify Placement by X-Ray
- Placed Surgery, ICU, GI Lab

Transabdominal Tube Management

- Inserted by Physician in Surgery or GI Lab
- Nursing Assessments
  - Tube Site
  - Patients Tolerance of Feedings
  - Tube Patency
- Site Care
  - Gauze Dressing First Weeks
  - Per Protocol
  - Always Vigilant: Skin Breakdown

Purpose of Tube Feedings

- Intact Stomach and / or Intestinal Function
- Can Not Take or Get Enough Food Orally
  - Unconscious
    - Coma
  - Extensive Mouth Surgery
  - Oral or Throat Cancer
  - Dysphagia
  - CVA
  - Aspiration
  - Esophageal or Gastric Disorders
    - Cancer surgery
    - Crohn’s Disease / Short Gut Syndrome
### Tube Feeding Advantages

- Oral Route: Always Considered Best
- Enteral Feeding: Preferred Over Parental
- Stomach: Body’s Natural Food Reservoir
- Reduces Risk of Enteritis
  - Chemicals in Stomach
    - Destroy Microorganism
    - Hydrochloric Acid (HCL)
    - pH 1-2

### Tube Feeding Disadvantages

- Potential for Gastric Reflux
  - Greater: Gastric Feedings
  - Decreased: Intestinal Feedings, But Not Eliminated
- Diarrhea
  - Initial Administration
    - Gradual Increments
  - Hypertonic Formulas
    - Concentrated

### Disadvantages (Cont.)

- Dumping Syndrome
  - Calorie-Dense Nourishment Enters the Small Intestine Rapidly
  - Fluid Shift: Circulating Blood to the Intestine
  - Blood Sugar Drops
    - Surge of Insulin: Help with Digestion & Absorption of Nourishment
  - Symptoms
    - Weakness
    - Dizziness
    - Sweating
    - Nausea
Formula Considerations

- Individual Nutritional Needs
- Factors
  - Weight
  - Nutritional Status
  - Concurrent Medical Conditions
  - Projected Length of Therapy
- Varied formulas
  - Glucerna
  - Nephro
  - Pulmocare
  - 2 Cal HN

Tube Feeding Schedules

- Bolus
- Intermittent
- Cyclic
- Continuous

Bolus

- **Instillation** of Liquid Nourishment
- 4-6 Times Per Day
- 250-400mls in **Less Than 30 Minutes**
- Mimics Natural Filling and Emptying of Stomach
- Least Desirable Method
  - Rapid Distention of Stomach
    - Gastric Discomfort
    - Increased Risk for Reflux
  - Greater Risk
    - Regurgitation
    - Vomiting
    - Aspiration
Intermittent

- **Gradual** Instillation of Liquid Nourishment
- **Gravity** Drip 4-6 Times Per Day
- 250-400mls **Over 30-60 Minutes**
  - Use of Feeding Bag
  - Regulate With Roller Clamp
- Less Bloating / Better Tolerated
- Clean Feeding Bag After Each Use
  - New Feeding Bag Daily

Cyclic

- **Continuous** Instillation of Liquid Nourishment: **Specific Timeframe**
- Feeding Pump
- **Over 8-12 hours**
  - During late evening or sleep
  - Wanting to wean pt
- 12-16 hours Break
  - Take Food Orally During Day
  - Decrease Feeding as Oral Intake Increases

Continuous

- Instillation of Liquid Nourishment **Without Interruption**
- Feeding Pump Regulates Rate
  - Starts Slowly
  - Daily Rate Increases Until Desired Amount **Per 24 Hours Reached**
- Can be Given Directly Into Small Intestine
- Reduced Risk : Vomiting & / or Aspiration
- Pump Must Go Where Patient Does
  - Kids- Backpacks
Assessments

• Basic
  – Weight: Daily Initially
  – Intake & Output
  – Abdominal Assessment
    • N/V
    • Discomfort
    • Distention
    • Bowel Sounds
    • Bowel Elimination

Assessments (Cont.)

• Specific
  – Skin Assessment
  – Nose
  – Abdominal Site
  – Gastric Residual
    • Volume of Liquid Feeding
      – Remains Within the Stomach
      – After Previous Feeding
    • Monitors Effectiveness of Therapy
    • Rule of Thumb
      – No More Than 100mls
      – No More Than 20% of the Previous Hour’s Feeding Volume
    • Guidelines Pg. 675

Nursing Interventions

• Maintain Tube Patency
• Prone to Obstruction
  – Large Molecular Nutrients
  – Rates: Less Than 50mls / hr
  – Medications
  – Re-feeding Partially Digested Residual
• Flush With 30-60cc Water
  – Before and After Medications, Bolus or Gravity Feedings
  – Continuous Feedings: Every 4 hours
  – After Re-feeding Gastric Residual
• Alternatives
  • Cranberry Juice
  • Carbonated Drinks (Coke)
  • Warm Coffee
Interventions (Cont.)

- Obstructions
  - Meat Tenderizer or Pancreatic Enzymes Require M.D. Order
  - Guidelines Pg. 676
- Hydration
  - Feedings Approximately 80% Water
  - Patient Requires More Hydration
  - Free Water: 120-200cc Every 6 Hours
- Home Care
  - Patient or Family Teaching
  - Home Health Agency
  - Infusion Company
  - Medical Equipment

Nursing Diagnosis (Pg. 678)

- Altered Nutrition: Less Than Body Requirements
- Self-Care Deficit
- Impaired Swallowing
- Risk for Aspiration
- Diarrhea
- Constipation
- Knowledge Deficit
- Alteration in Self Image

Gerontologic Considerations

- Decreased Effectiveness of Gag Reflex
  - Risk for Aspiration
- Increased Risk for Fluid & Electrolyte Imbalance
- Easily Develop Hyperglycemia with Tube Feedings
- Changes in Mental Status
  - Early Indicator of Fluid or Electrolyte Imbalance
  - Pull Tubes Out
- Tolerate Continuous Feedings Better
- Risk for Pressure Ulcers
  - Decreased Nutritional Status
  - Usual Skin Changes of Elderly
Gerontologic (Cont.)

- Allow Adequate Time for Processing
  Patient Teaching
- Fixed Incomes
- Ethical Issues
  - “When do We Stop?”
  - Specific Instructions Listed Within Advanced Directive