The University of Texas Medical Branch
Tube Placement for Enteral Nutrition in Adults

Guiding Principles

- Enteral nutrition is preferred over parenteral nutrition. Benefits are present even if a small portion of nutritional needs are met via the GI tract. Complications associated with lack of feeding the GI tract include translocation of bacteria from the GI tract to the bloodstream and reduction in bile flow leading to cholestasis, biliary sludge, and cholelithiasis (ASPEN/SCCM 2009 and Gastroenterology Nursing 2006)
- Enteral feedings should be started as soon as possible- evidence indicates initiation within 24-48 hours of admission is beneficial. Demonstrated benefits of early enteral nutrition may include decreased infection rates, shorter ICU stay, shorter duration of mechanical ventilation, and decreased hospital LOS (International Anesthesiology Clinics, 2009 and SCCM/ASPEN Guidelines, 2009).
- In the ICU population, neither the presence nor the absence of bowel sounds and evidence of passage of flatus and stool is required for the initiation of enteral feeding (Critical Care Medicine, 2009)
- Enteral feeding tubes (small bore) are available at UTMB. Nursing staff may only insert non-styleted enteral feeding tubes (UTMB Nursing Policy).
- Gastric (large bore) tubes are also available at UTMB. While they are traditionally utilized less for feedings, evidence indicates that feedings should not be delayed waiting for placement of a small bore tube, if one cannot be placed easily or quickly.
- If a small bore tube is placed, and placement is confirmed in the stomach, feedings may be initiated, with closer monitoring (see guidelines). Unnecessary delays should be avoided.
- Any tubes placed for the delivery of nutrition or medications may not be utilized until X-ray confirmation of placement (by MD) has been completed. This includes both large bore and small bore tubes. An EPIC order will be entered by MD that the tube is cleared for use.
- Repeat X-rays should be obtained any time there is a concern for potential dislodgement- vomiting, excessive coughing or patient movement, change in tube's external length, etc.

Practice Guidelines

1. Enteral tube placement (weighted, non-styleted) is appropriate as a first choice for the delivery of nutrition
    A. If tube placement is successful, with confirmation of placement in the small bowel, initiate feedings
    B. If tube placement is successful, with confirmation of placement in the stomach, initiate feedings if patient meets criteria for gastric feedings (see gastric feeding guidelines)
        1.) Maintain HOB elevation 30-45 degrees
        2.) Check residuals after 2 hours; then Q 4 hours
        3.) If gastric residuals $\geq$ 250 ml after a second gastric residual check, consider promotility agent (aspen guidelines, page 44, evidence level A-good research-based evidence to support guideline [prospective, randomized trials])
        4.) If gastric residual volumes > 500 ml, hold feedings and re-evaluate patient (aspen guidelines, page 45, evidence level B- fair research-based evidence to support guideline [well-designed studies without randomization])
        5.) Monitor patient closely for other symptoms of intolerance- vomiting, abdominal distention, etc.
    C. If tube placement is successful, with confirmation of placement in the stomach, and the patient **does not meet criteria** for gastric feedings:
        1.) Attempt reinsertion; maximum of two (2) more times
        2.) Consider agents to promote motility
        3.) Place consult in EPIC for evaluation by GI service or Interventional Radiology
        4.) See "Enteral Feeding Tubes with Stylets" on page 2

D. If enteral tube placement has been unsuccessful after two (2) attempts, and the patient **meets criteria** for gastric feedings:
   1.) Insert gastric (large bore) tube, and initiate feedings in the stomach
   2.) Maintain HOB elevation 30-45 degrees
   3.) Check residuals after 2 hours; then Q 4 hours
   4.) If gastric residuals $\geq$ 250 ml after a second gastric residual check, consider promotility agent (aspen guidelines, page 44, evidence level A-good research-based evidence to support guideline [prospective, randomized trials])
   5.) If gastric residual volumes > 500 ml, hold feedings and re-evaluate patient (aspen guidelines, page 45, evidence level B- fair research-based evidence to support guideline [well-designed studies without randomization])
   6.) Monitor patient closely for other symptoms of intolerance- vomiting, abdominal distention, etc.

2. Controversy exists in the literature regarding the benefits of post-pyloric versus gastric feeding. Some studies have demonstrated some benefits of post-pyloric feedings, particularly for specific populations. (National Collaborating Centre for Acute Care [2006], Hsu [2009], Metheny [2010], Acosta-Escribano [2010], Dynamed [2011])

   Gastric tube placement is an acceptable alternative for most critical care patients
   "Nasojejunal route for enteral feedings in ICU patients are not required unless gastric feeding intolerance is present" (aspen guidelines, page 22, evidence level A- good research-based evidence to support the guideline [prospective, randomized trials])

Gastric Feeding Guidelines

Patient may receive gastric feedings unless any of the following conditions exist:
1.) Contraindication to HOB elevation
2.) Gastric outlet obstruction
3.) Gastroparesis
4.) Pancreatitis
5.) Patients with known reflux and aspiration of gastric contents

Enteral Feeding Tubes with Stylets

Enteral feeding tubes with stylets may be considered when placement without a stylet has been unsuccessful and when delivery of tube feedings into the small bowel is considered necessary.
1.) Insertion may only be performed by Faculty Physicians, or direct supervision of residents or fellows by Faculty Physician
2.) Options to facilitate placement may include bronchoscopy or GI endoscopy
3.) X-ray confirmation of placement is required

Selected References

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