

## HIGHLIGHTS: SMALL BOWEL FEEDING TUBE INSERTION REVIEW

### General Goals

- Attempt to insert all feeding tubes into the small bowel during initial insertion
- If attempts to get the tube into the small bowel are not successful but the tube is successfully placed into the stomach, initiate gastric feeding and monitor for tolerance
- If a patient has previously tolerated gastric feeding and requires reinsertion of the feeding tube, gastric placement is acceptable.
- A minimum of 2 xrays is required for ALL feeding tube insertions, regardless of gastric or small bowel placement
- The first xray should be performed when the tube is inserted to about 35 cm; a chest xray should be performed to rule out lung placement
- Two xrays are required even for gastric placement to ensure feeding tube has not coiled upward with the tip located in the esophagus
- Gastric drainage tubes should be inserted orally if the patient is intubated. Nasal route may be used for feeding tubes unless contraindicated.
- Gastric drainage can be continued during enteral feeding if the tube is inserted into the small bowel.
- If gastric drainage is < 250 per shift, consider straight drainage to avoid gastric mucosal trauma from prolonged suction.
- If gastric drainage is < 100-150 per shift, assess for tube removal.

### Technique:

#### Catheter Preparation

- Use the on-line procedure for insertion of a small bowel feeding tube: <http://www.lhsc.on.ca/critcare/icu/procedures/sbft.html>
- Soak the tip of the feeding tube in water for ~5-10 seconds to facilitate tube advancement
- Use a 60 ml LUER lock catheter. Tighten the guidewire and caps at the "Y" connector.
- Flush the guidewire lumen with saline to make removal easier.
- Flush air through the guidewire to remove any moisture; this is done to reduce coughing/airway irritation
- Consider using a urojet (water soluble lidocaine) to lubricate the tip. Alternatively, use muco.
- Provide analgesia prior to procedure if required.
- Rule out any contraindications before proceeding, such as esophageal/gastric surgery, active bleeding of the nose or esophagus.

#### Initial Insertion

- Advance feeding tube to ~35 cm. Do not attempt to advance into the stomach at this point.
- Checks: Attempt to aspirate at ~25 cm; if connections are tight and air is withdrawn, you may be in the trachea. It should be difficult to aspirate if the tube is in the esophagus at this point.
- Obtain a **chest** xray at 35 cm to RULE OUT lung placement. Confirming placement by xray will identify airway placement before the tube has been advanced far enough to damage lung parenchyma.
- Review xray with physician to confirm GI placement.
- Upon confirmation, advance the feeding tube another 20 cm to ensure gastric placement (vs esophageal). Do not advance beyond ~60 cm or the tube may begin curling in the antrum of the stomach.

#### Administer Prokinetic

- Obtain an order for 500 mg IV erythromycin for feeding tube placement. *Be sure to check for allergies before getting the order.*
- If erythromycin allergy or contraindication (e.g., very prolonged QT interval), 10 mg maxeran can be given.

- Erythromycin is available as night cupboard stock in the medication fridge by Room 3. Bottles of 500 mg of erythromycin are available in reconstituted form. Simply draw up the drug and add to a 100 ml minibag (erythromycin is not stable in smaller volumes of IV fluid).
- You can insert the back of the medication order into the night cupboard bag and send to pharmacy...they will then restock the night cupboard. Do not send the back of the pharmacy record separately or pharmacy will prepare a mini bag with erythromycin.
- Turn patient as far over to the right side (head up) as tolerated. Leave in this position during administration of erythromycin or maxeran, until advancement into the small bowel is completed.
- Administer erythromycin 500 mg in 100 ml over 30 minutes (if central IV) or 60 minutes (if peripheral IV). Begin advancing feeding tube within 30 minutes of completion of the infusion (10 minutes is generally a good time).
- If maxeran is ordered, administer IV direct and advance feeding tube within 10 minutes.
- If a second dose of erythromycin is given, wait 6 hours between doses.

### **Advance Feeding Tube**

- Following completion of prokinetic administration, with patient still on the right side as tolerated, instill ~300-500 cc of air into the stomach.
- With a slow, corkscrew twist, advance the feeding tube in ~10 cm increments. Typically, there will be a small amount of resistance and recoil (1-3 cm) with each advancement. If there is no resistance at all, or there is a lot of resistance and recoil, the tube is likely curling. Pull back and try again.
- If the tube successfully enters the small bowel, aspirate will usually take on a more yellow appearance. Aspirate from the small bowel is also usually alkaline when compared to stomach contents (that are usually acidic). These rules are not 100%; you may have a tube advance without any resistance that has gastric looking drainage that is in the small bowel on xray.
- Continue advancing the tube until the entire feeding tube is inserted. If resistance is met, or you are concerned that coiling is occurring, obtain an abdominal xray to check placement. If small bowel placement is confirmed on xray, advance the tube the rest of the way before removing the guidewire.
- Prior to xray, flush the guidewire with a small amount of saline to ensure guidewire doesn't become stuck.

### **Confirmation**

- Final placement requires confirmation by abdominal xray.
- A second xray is mandatory, even if gastric placement is the goal. This is necessary to ensure the feeding tube has not coiled upward into the esophagus.
- If xray reveals gastric placement, ensure that the tip is well into the stomach (and not curled upward toward esophagus). Feeds can be initiated in the stomach and the patient reassessed for the need to pursue a second small bowel feeding tube insertion attempt.
- Following physician verification, remove guidewire. Flush the guidewire with saline first, and then SLOWLY remove wire (rapid removal can cause displacement of the feeding tube into the stomach).

### **Communicate/Document:**

- Mark the feeding tube placement on the kardex and document insertion in the AI record. Identify that the feeding tube is a "nasal-small bowel".
- Standard feeding tubes are 109 cm in length. Identify the amount of tube that is in the patient, at the point of the nare. For example, if there is 10 cm of catheter showing beyond the nare, the catheter is at 99cm.
- Do not check for residuals from small bowel feeding tubes.
- Feeding tubes can migrate further or slip back into the stomach, even if the nasal placement remains unchanged. When in doubt or if concern exists regarding tube placement, repeat the abdominal xray.

- If the feeding tube should be inadvertently pulled back, do not automatically remove the tube. Check xray placement first to avoid unnecessary removal as the tube may be in a more proximal segment of the small bowel or in the stomach.