NASODUODENAL FEEDING TUBES: CARE AND MANAGEMENT

A) GENERAL CONSIDERATIONS:
Nasoduodenal feeding tubes (NDFT) allow for enteral nutrition (EN) when gastric stasis and/or aspiration risk (i.e. gastroesophageal reflux) precludes the nasogastric (NG) route. NDFT can be placed manually (blindly at the bedside or intraoperatively), endoscopically, or by fluoroscopic technique. NDFT must be managed carefully in order to ensure safe and cost-effective EN.

B) GENERAL GUIDELINES:
1) PREVENTING NDFT DISLODGMNT – SECURING THE NDFT
1) Wipe nose with alcohol swab to remove oil.
2) Prepare nose with a barrier/adhesive product.
3) Prepare silk tape.
4) Place tape on nose (a); pinch tape at nostril to reduce contact pressure.
5) Wrap tape legs (b) along a 3in (8 cm) length of tube.
6) Secure tape (a) on nose with 2nd piece of tape (c).
7) Check tube security daily (tug tube).
8) Replace tape as indicated.

2) FEED INITIATION AND TITRATION:
Initiate feeds at 25 ml/hr and increase by 25 ml/hr Q4H to goal rate. Do not decrease the feed rate based on gastric residual volumes (GRV) (refer to section #5).

3) PREVENTION OF ASPIRATION:
   a) CONCURRENT GASTRIC DECOMPRESSION:
   Gastric secretions account for approximately 2400 ml of the fluid handled by the gastrointestinal tract (GIT) each day. If gastric stasis is a concern, place a decompression tube such as an Argyle Salem Sump NG tube® (Sherwood Medical, St. Louis, MO, USA.) to allow for gastric decompression. Clamp the NG tube; decompress and discard GRV Q4H. Do not place the NG tube on suction as this may result in gastric mucosal irritation, fluid and electrolyte imbalance, and decompress feed from the small bowel. If hourly decompression is required place the NG on straight drainage. NG tubes can be removed once gastric decompression is no longer required.

   b) PATIENT POSITIONING:
   Unless contraindicated, elevate the head of bed 45°. If this is not feasible, elevate the head of bed as much as possible.
4) TUBE OCCLUSION:
   a) PREVENTION: In order to keep the lumen and tip of the NDFT clear, always flush the NDFT with 20 ml water every 4 hours and anytime feeds are held.
   b) MEDICATION FORM: Avoid liquid formulations (elixirs, solutions, suspension, and syrups) as they may gel or form globular particles when in contact with feed, increasing the risk of NDFT occlusion. Do not deliver bulk-forming agents via the NDFT; they congeal quickly and will obstruct the NDFT. Tablets are preferred over liquid medications where possible. Crush tablets well and dilute with 15-30 ml water.
   c) MEDICATION ADMINISTRATION: Whether using a liquid or solid medication, flush the NDFT with 20 ml water before and after each medication is given. The risk of tube occlusion can be reduced by using the NG decompression tube for medication delivery rather than the NDFT. (Note: only use the NG tube for medications if gastric residual volumes are <250 ml Q4H).
   d) RESOLUTION OF TUBE OCCLUSION: Refer below.

5) TROUBLESHOOTING GUIDE FOR NDFT:

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<th>PROBLEM</th>
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| 1) Elevated GRV.              | A) Ensure NG not on suction. If on suction, gastric residuals will not reflect gastric emptying. Clamp NG; decompress Q4H or place to straight drainage via gravity.  
B) Ensure GRV are being discarded, not refed.  
C) As a general rule, a problem does not exist unless the GRV contains a significant amount of feed. If the GRV contains feed, see point 2 below. |
| 2) Gastric residual contains feed. | A) Ensure NG not on suction (suction will decompress feed from the small bowel).  
B) Obtain an abdominal x-ray* to locate tube tips. If NDFT has migrated out of duodenum, reposition. If NG has migrated into duodenum, gently pull tube back into stomach.  
C) If both tubes are in good position, rule out constipation, paralytic ileus, or other (i.e. mechanical obstruction, gut ischemia).  
**Constipation:** Continue EN; minimise narcotic agents; escalate cathartic agents.  
**Small bowel/colonic ileus:** Reduce feed rate to 10 - 25 ml/hr; resolve constipation if present (see above); correct all electrolyte imbalances (i.e. hypokalemia); minimise narcotic agents. Consider TPN*(assessed individually).  
**Mechanical obstruction/gut ischemia:** Stop feeds; MD interventions as indicated; consider TPN* (time frame to initiation assessed individually as noted above).  
D) If both tubes are in good position (i.e. NDFT tip in 4th section of duodenum) and constipation/ileus/obstruction ruled out, the problem is probably that of simple duodenal reflux. To decrease reflux, reduce the amount of fluid provided via the GIT (i.e. concentrate feeds*, discontinue extra water*); ensure HOB elevated >45°; minimise narcotic agents*; initiate an IV motility agent* (or second motility agent*).  
E) If no response to above and feed reflux significant; attempt to reposition the NDFT tip beyond well into the proximal jejunum.  
F) If reflux persists, decrease feed rate to 25 ml/hr and consider initiating
3) Occluded NDFT.

**Technique:** Using a red IV cap, cap off 2nd port of tube; insert a water-filled 5 mL syringe fitted with white ribbed graduated connector (see diagram) into main port; *pump syringe repeatedly.* If ineffective, insert slurry (2 tabs crushed pancreatic enzyme mixed with 5 ml water) filled syringe into main port; *pump syringe repeatedly.* If ineffective, leave slurry in tube for 2 – 4 hrs; (or overnight). *Remove the NDFT tube only after several serious attempts have been made.*

- *Requires MD order*