

PROCEDURE FOR: Gastrostomy Devices

- POLICY:**
1. Gastrostomy devices and supplies vary. Refer to manufacturer instructions prior to use and differentiate among supplies and their uses (for example, decompression tubes and feeding tubes). The manufacturer's instructions may supersede the content of this protocol/procedure.
 2. Specific orders of the surgeon, if agreement between orders and this protocol/procedure cannot be reached, supersede the content of this protocol/procedure.
 - a. Patient care guidelines from Connecticut Children's Medical Center are considered to be sanctioned by the surgeons.

DESIRED PATIENT

- OUTCOMES:**
1. Gastrostomy devices will remain securely in place and free of infection.
 2. Skin integrity will be maintained around the gastrostomy site.
 3. Pain and discomfort will be minimized.
 4. The infant will demonstrate consistent and appropriate weight gain.

SUPPORTIVE

DATA: A gastrostomy device is placed when it is anticipated that an infant will not be able to achieve oral feeds or when the transition to full oral feeds is prolonged. Surgical approaches to gastrostomy device placement and the types of devices used vary. Some infants may have a fundoplication done at the same time.

A percutaneous endoscopic gastrostomy (PEG) procedure may be done. During the PEG procedure, an endoscope is advanced into the stomach, allowing correct positioning of the feeding device. Advantages to the PEG approach are that the procedure is minimally invasive and can be done using a local anesthetic and moderate sedation. Both gastrostomy tubes and/or buttons may be inserted using this approach.

The gastrostomy button was designed to circumvent the problems/ complications associated with the traditional gastrostomy tubes such as catheter migration with duodenal obstruction, external migration and abscess formation, repeated dislodgements, blockages, leakage, and excessive peristomal granulations (Gauderer, et al. Feeding Gastrostomy Button: Experience and Recommendations (1988). Journal of Pediatric Surgery 23(1): 24-28).

**CLINICAL
ASSESSMENT AND**

- CARE:**
1. Assessment
 - a. Assess site for redness, swelling or drainage (q eight hours minimum).
 - b. Perform pain assessment per perioperative protocol.
 - c. Assess for and report signs and symptoms of systemic infection (temp instability, tachycardia, tachypnea, apnea, lethargy).

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- d. Monitor for and report abdominal distention or regurgitation of gastric contents. Observe for leaking at gastrostomy site.
 - e. Assess for granulation tissue presence and other signs of healing. Report signs of poor healing.
 - f. Assess for correct tube placement. Obtain order from surgeon for frequency of aspiration of balloon. Notify surgery if tube dislodgement occurs.
 - g. Guaiac stools as ordered while feeding volume is being increased and once full volume is reached.
 - h. For continuous feedings:
 - 1) Check abdominal girth q 4 hours.
 - 2) Measure gastric aspirates a minimum of q 4 hours; document amount, color and consistency.
2. Safety
- a. Keep an extra gastrostomy device and Surgilube available at the bedside in the event of accidental dislodgement.
 - 1) These devices may need to be obtained from the surgeons/CCMC.
 - b. Call surgery if dislodgement occurs.
 - c. Post-operatively, obtain the following information and document on Kardex:
 - 1) Type of gastrostomy device
 - 2) Amount of water in balloon (as appropriate)
 - 3) Obtain order for frequency of balloon volume checks
 - 4) Cm marking (as appropriate)
 - 5) Surgeon's preference for gastrostomy tube care
3. Troubleshooting
- a. Tube migration (with gastrostomy tubes): before each feeding, verify that the tube cm marking number above the SECUR-LOK ring (for MIC tubes) is the same as the number documented in the Kardex. If the number visible is greater than that documented in the Kardex, the tube should be pulled out. Clean the tube and the ring as you are doing the site care/dressing changes and then pull out the tube until the correct number is visible. Do not pull if resistance is met. Adjust the ring 3mm above the skin (the size of a dime lying flat).
 - 1) Notify physician/AP if you are unable to correct tube position.

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- b. Obstruction: Adherence of residue to the inside of the device causes obstruction. The residue can be hardened stomach contents, medication and/or formula. Avoid this by flushing the device with 3-5ml of water before and after each feeding or medication or before tubing changes during continuous feedings. DO NOT use force to flush any device. If obstruction is met, first try repositioning the infant, then repeat the attempt at flushing the tube. If unsuccessful, notify MD/AP.
- c. Suspected Balloon Leakage: Before each feeding, verify that the tube cm marking above the SECUR-LOK (for MIC tubes) ring is the same as the number in the Kardex. If the visible number is less than the documented number, the balloon may have a slow leak causing the device to dislodge. Check the balloon for proper inflation (see procedure) and after verifying the correct amount of sterile water in the balloon, recheck the balloon volume/tube placement in 2 to 3 hours, and if balloon fluid volume is again less than the usual 3ml (or as ordered), notify physician.
- d. Leakage around site: This may be due to poor healing or enlargement/stretching of the track between the skin and the stomach. With persistent leakage, a larger device may be needed. Avoid tension/pulling on the device. Verify that the correct feeding set or decompression tube is connected for the intended purpose.

PROCEDURES: Gastrostomy Device: Dressing, Positioning, Feeding, Checking Balloon Inflation, Medications

EQUIPMENT: Extra gastrostomy device at bedside

- When suspended: Catheter tip syringe (60ml)
Twill tape
Decompression set (for button)
- When clamped: Catheter plug (gastrostomy tube)
- For dressing: Sterile water
Q-tips (sterile) or sterile gauze
Tape (paper)
IV gauze
- For feeding: Infusion or feeding pump as applicable
Bolus feeding set or continuous feeding set for button

PROCEDURE:

ACTION

POINTS OF EMPHASIS

- 1. Dressing / Site Care
 - a. Remove old dressing (if being used) and discard properly.
 - b. Wash hands.

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- c. Before granulation occurs, the dressing should be changed and site cleansed every eight hours (more frequently for wet dressings). Wash the skin around the tube (working from inner to outer area of GT site) using a q-tip soaked in sterile water or a sterile gauze moistened with sterile water. Use a circular motion and do this at least 3 times or until the area is cleaned. Using a dry q-tip or gauze, repeat as above to dry area well.
- d. If ordered, apply Bacitracin or other antimicrobial to the gastrostomy site. Avoid using petroleum jelly or other petroleum-based ointments around the device.
- e. Slide IV gauze to center of gastric tube. Use clean, not sterile, technique. A small piece of paper tape may be used to secure the dressing to the abdomen.
- f. Once granulation has occurred, cleanse and dress (if ordered) as described above q day.
- g. Once full healing has occurred, surgeon can order that area around GT can be cleaned with soap and water, rinsed, then dried well. No dressing should be necessary.
- h. Secure the ring (e.g., MIC tubes) above the skin.
- d. Petroleum-based products may break down gastrostomy catheters.
- e. Dressings are not needed with MIC gastrostomy tubes or those with discs that lay close to the abdominal wall.
- g. Once full healing has occurred, infant may have tub bath (obtain order). No tub baths during the first week after placement.
- h. The area between the ring and the skin should be about 3mm which is the size of a dime laying flat.

2. Feedings

a. Continuous feedings:

- 1) Verify that the device is secure and properly positioned. Check residuals per clinical assessment and care section of this protocol/procedure.
- 2) For gastrostomy tube: the infant is fed through a suspended tube. The feeding is infused by an infusion pump or feeding pump and allowed to drop continuously into the syringe.

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- 3) For gastrostomy buttons and other devices (such as MIC-KEY): The continuous feeding set is attached to the device and the feeding is infused at the ordered rate.

b. Intermittent feedings:

- 1) Verify that the device is secure and properly positioned. Check residuals per clinical assessment and care section of this protocol/procedure.

- 2) For gastrostomy tube:

- a) Pour the feeding into a suspended catheter tip syringe and allow it to infuse by gravity.

- a) If the feeding does not start spontaneously by gravity, very brief gentle pressure with the plunger may be needed to start the feedings.

- b) Infuse the feeding slowly over about 20 minutes. Rapid infusion may be slowed by lowering the syringe.

- c) Avoid letting air enter the stomach at the end of the feeding.

- d) Flush the tube with 3 to 5ml tap water after feeding and medication to prevent tube obstruction.

- e) The physician may order clamping of tube after feeding.

- e) Allows assessment of tolerance to accumulation of gastric contents in stomach.

- 3) For gastrostomy button or other devices (such as MIC-KEY):

- a) Connect the appropriate bolus feeding tube to the gastrostomy device.

- b) Inject 3 to 5ml tap water to determine that the device is not obstructed.

- c) Connect the catheter tip syringe to the bolus tubing set.

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d) Administer feeding by gravity as above for gastrostomy tube feedings.

d) The clamp on the feeding set may be used to regulate the flow of the feeding.

3. Positioning the Gastrostomy Tube

a. Suspended:

1) Physician/AP may order tube suspended at a certain height above the abdomen.

2) Remove the plunger of a catheter tip of syringe and place the syringe barrel in end of the gastrostomy tube. Suspend syringe with twill tape at prescribed height above abdomen.

2) If a gastrostomy button is in place, the syringe plunger is connected to the decompression set. The decompression tubing is larger in diameter than the feeding set. It is not to be used for feedings.

b. Clamped:

1) Physician/AP may order gastrostomy tube to be clamped.

2) Place catheter plug in end of gastrostomy tube or close the button device after removing the feeding set.

4. Checking Balloon Inflation (Gastrostomy Tube or MIC-KEY)

a. Once per week (or per physician order) or if misplacement of device is suspected, check the balloon for proper inflation.

b. Connect a 6ml syringe onto the balloon port and withdraw fluid, noting how much fluid is there.

c. If the amount has decreased, fill the syringe with the correct amount of sterile water (should be documented in Kardex) and inject into balloon port after ensuring proper insertion depth. Disconnect and discard the syringe.

b. Hold device securely at skin level with other hand to prevent accidental dislodgement. It may be helpful to have a second person assist you.

c. The balloon generally can hold 5ml but the manufacturer recommends 3ml.

The balloon port sometimes collects debris over time. If one encounters any problems inflating or deflating the balloon, clean the port using sterile water soaked q-tips and try again. Never force the fluid in.

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5. Medications

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| a. Check with physician about the route to give medications and whether medications should be given on an empty stomach or with formula. | a. Some medications work better if given p.o. (if infant is able to take p.o.). |
| b. Wash hands. | |
| c. Draw up medication(s) into syringe(s). | |
| d. If giving medication via gastrostomy tube, mix the medication(s) with 5ml of water and give through the medication port, then flush with 5ml of water. | d. Ensures that all of the medication has entered stomach. |

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 2/91

REVISION DATES: 6/91, 9/92, 8/93, 12/94, 6/97, 7/97, 9/99, 10/03, 12/08

REVIEWED DATES: 11/06