NURSING SKILL

Administering Medication Through a Nasogastric Tube

Purpose

Administering medication through a nasogastric tube (NGT) allows safe delivery of pharmaceutical agents, radiologic contrast media, or warmed fluids (for gastric lavage in patients with hypothermia) to the GI tract. Two common types of NGTs used in adults are the Levin tube (single lumen), and the Salem Sump (2 lumens).

Red Flags

- Recognize patients with an NGT have a higher risk of tracheobronchial aspiration, nasal erosion, esophagitis, and gastric ulcers. Implement aspiration precautions for patients receiving tube feedings. [1, 2, 3, 4]
- Understand if patient experiences respiratory distress while receiving medication through their NGT, it may be due to tube migrating into bronchial tree. If this occurs, medication should be stopped immediately and treating clinician must be notified. [1, 5, 6]
- Note vomiting may cause tube to become displaced and can also be a sign of delayed gastric emptying or gastric ileus. [7]
- **Do not** use force to infuse solution in NGT as this may create excessive pressure in stomach, which can cause regurgitation of stomach contents and aspiration. [7]
- Suspect physical obstruction if hyperactive borborygmi sounds are particularly prominent and are accompanied by cramping abdominal pain.

Procedure

SUPPLIES

- Nonsterile gloves
- Other personal protective equipment if you anticipate exposure to biohazards, such as bodily fluids and respiratory droplets/aerosols
- Disinfectant, facility-approved
- Pain assessment tool, facility-approved

- Medication administration record
- Prescribed medication to be instilled in liquid, tablet, or capsule form
- Enteral or catheter-tip/piston syringe (at least 30 mL)
- Graduated container
- Syringes of appropriate size for prescribed doses and/or medicine cup(s)
- Sterile water or other approved fluid at room temperature for dilution and flushing
- Pill crusher or mortar and pestle for tablet administration
- Syringe of appropriate size (for example, catheter tip or bulb) or irrigation set
- pH test strips
- Emesis basin
- Protective barrier for the patient, such as a towel or linen-saver pad

PREPROCEDURE STEPS

1. Check care plan, treating clinician orders, and facility practice on administering medication via NGT. Plan to administer stat medications within 30 minutes of time ordered.
2. Review patient's medical history/medical record for:
   - History of surgery or injury to nose, nasal cavity, pharynx, esophagus, stomach, or head
   - Medication use
   - Labs/other diagnostic test results
   - Allergies (use alternatives, as appropriate)
3. Follow standard preprocedure steps, as appropriate. [8, 9, 10]

PROCEDURE STEPS

1. Use standard aseptic nontouch technique to prevent infection. [11]
2. Create a general aseptic field by cleaning off and disinfecting working surface (or tray). Let surface dry before using. [11]
3. Perform a physical assessment of lungs and abdomen, assessing specifically for hyperactive borborygmi sounds.

4. Position patient in a high-Fowler position on left side if patient's condition permits. [12]

5. Place a towel or other linen saver on patient's chest.
6. Pause continuous enteral feeding or suction, as needed. [1]
7. Allow sufficient time for stomach to empty if medication should be administered on an empty stomach.
8. Verify placement of NGT per facility practice. [2, 13, 14, 15]

9. Perform x-ray verification after initial NGT placement and when dislodgement is suspected. [1]
10. Review abdominal and chest x-ray results after initial insertion and as needed. [1]
11. Check external length of NGT by observing for movement of permanent ink mark that was previously placed on tube where it exits nares. [1]
12. Follow procedure for aspirating and testing pH of gastric contents. [1]
    a. Perform hand hygiene. Put on nonsterile gloves. [11]
    b. Attach syringe to drainage lumen of NGT and attempt to aspirate stomach contents.
    c. Reposition patient to left side to maximize potential for withdrawing gastric secretions in catheter.
    d. If unable to aspirate gastric secretions, advance NGT slightly and reattempt aspiration.
    e. Check gastric contents visually. Examine aspirate for changes in appearance and volume. Gastric secretions typically appear clear and colorless or pale yellow or green, while small bowel secretions are often yellow-brownish due to presence of bile. [1]
    f. Perform pH measurement on aspirate. A pH of 5 or lower suggests gastric placement of tube. A pH higher than 5 suggests tube migrated into esophagus or small bowel. [1]

g. Return aspirate to stomach per facility protocol.
h. Flush tube with 15 mL of sterile water. Use more or less water as indicated in treating clinician order or facility practice depending on patient's fluid volume status and needs. [2]

13. Verify rights of safe medication administration. [8, 16, 17]
14. Crush medication into a fine powder and dissolve in an appropriate volume (30 mL for adults or at least 5 mL for pediatric patients and patients with fluid restrictions) of sterile water in a medicine cup. [1]
15. Attach a 50-60–mL syringe with plunger removed to distal end of NGT.
16. Holding NGT (at level of patient's eye) using nondominant hand, bend NGT so it is clamped, and attach syringe.
17. Pour medication in syringe.
18. Unclamp NGT and allow fluid to empty in NGT. [1]
19. Clamp NGT as soon as syringe is empty.
20. Flush NGT with 15 mL of sterile water. Adjust volume for pediatric patients and for patients who are fluid restricted. [1]
21. Administer next medication if applicable.
22. Flush tube with at least 15 mL of sterile water after administering last medication. [1]
23. Reposition patient to a comfortable position with upper body elevated for at least 1 hour after medication administration.
24. Keep patient on continuous enteral feeding elevated after 1-hour period.
25. Resume feeding after 30 minutes depending on medication given.
26. Resume suction after medication has been absorbed (45 minutes to 1 hour), as indicated.
27. Wash and store reusable equipment (piston syringe) in a clean, dry place per facility protocol. [1]

PATIENT/FAMILY EDUCATION

- Educate patient/family about reasons for administering medications through an NGT.
- Review possible side effects of all medication given.

- Explain NGT can be mildly uncomfortable but should not be painful or cause breathing difficulties, coughing, choking, vomiting, or skin breakdown. Emphasize importance of contacting nurse clinician or treating clinician if these signs/symptoms develop and how to notify them.
- Encourage patient to call for help while in hospital when changing positions or getting out of bed to avoid dislodging NGT.
- Provide patient education resources, if available, to reinforce verbal education.

POSTPROCEDURE STEPS

1. Monitor NGT position at 4-hour intervals using a variety of methods. [1]
2. Verify NGT placement prior to each intervention due to risk of tube displacement. [2, 13, 14, 15]
3. Check placement and patency of NGT in patients who have vomited or have been coughing vigorously, and after patient activity and transfer.
4. Monitor for airway patency on a regular basis.
5. Check for patency once per shift or more often.
6. Inspect nares in which NGT is inserted regularly and provide skin care frequently.
7. Change enteral feeding tubing and flushing equipment every 24 hours to reduce bacterial growth.
8. Follow standard postprocedure steps, as appropriate. [8]

DOCUMENTATION

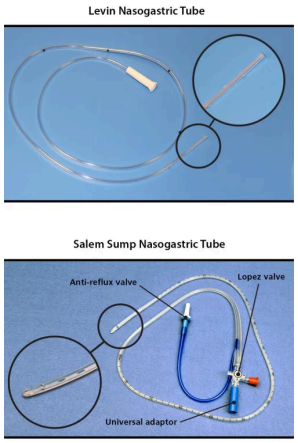
Update patient's care plan and medical record. Include:

- Date/time and route medication was administered
- Name and dose of medication
- Time NGT feeding was stopped and resumed, if indicated
- Amount and type of irrigant/flush solution
- Patient assessment information, including response to procedure and pain/discomfort during and immediately following medication administration

- Any unexpected patient events, interventions performed, whether treating clinician was notified, and patient outcome
- Patient/family education, such as topics presented, response to education, plan for follow-up education, any communication barriers, and techniques that promoted successful communication

Care Considerations

- An NGT allows enteral medication delivery in patients who have a functioning GI tract but are unable to orally ingest medication. See indications for NGT use. The 2 most commonly used types of NGTs in adults are the Levin tube and the Salem Sump. [1]



- The water bubbling method and air auscultation methods are not reliable methods to verify the placement of the NGT and **should not** be used. [15]
- Liquid medications must be diluted in an equal volume of sterile water (1:1 ratio). [2]
- Sustained-release and extended-release medications cannot be crushed or opened and are not appropriate for administration via NGT. Crushing these medications would cause a rapid release of medication in the patient's stomach, making overdose likely to occur. [12]
- The American Society for Parenteral and Enteral Nutrition (ASPEN) has guidelines for administering medications by enteral feeding tubes. [2]