Chapter 18

Nonaseptic Techniques

Objectives

1. Describe the insertion, care, and removal of nasogastric tubes.
2. Assist a patient with the use of a male urinal.
3. Assist a patient with the use of a bedpan.
4. Describe the common types of enemas.
5. Describe the procedure for a cleansing enema.

Objectives

6. State the need for patient teaching regarding the barium enema—preparation, procedural, and postprocedural.
7. Differentiate between the single-contrast and double-contrast barium enemas.
8. Describe the procedure for a colostomy barium enema.
9. State the needs of a colostomy patient undergoing a barium enema.
Nonaseptic Technique

- Requires special procedures for nonsterile procedures
- Typically involves tubes and lines into the digestive tract
- Body wastes
- Enemas
- Enemas for contrast examination

Nasogastric Tubes

- Nasogastric (NG) tubes are plastic or rubber tubes inserted through the nasopharynx into the stomach
- Used for administration of medications and gastric decompression or removal of flatus (gas) and fluids from the stomach after intestinal obstruction or major trauma

- Most common is Levin tube
- Patients with an NG tube in place usually experience some discomfort
- Care must be taken to prevent accidental withdrawal of the tube after it has been inserted
- In most cases, a physician or nurse is responsible for inserting an NG tube
Nasogastric Tube Insertion

• Done by physician or nurse
• Consent signed
• Pt in high Fowler’s position
• Measure distance from nose to stomach
• Use lots of lubricant
• Pt instructed to swallow (H₂O or air)
• DO NOT force
• Tube placement verified by fluoroscopy or radiograph

Checking NG Tube Placement

• Try pulling back syringe of gastric fluid
• Inject air and listen with stethoscope for “whooshing” sound
• Tape in place
• Perform x-ray fluoroscopy

Transporting Patient with Nasogastric Tube

• When NG tubes are used for gastric decompression, they are typically connected to an intermittent gastric suctioning device.
• Confirm that the physician has given an order allowing the transfer and interruption of suctioning.
• Suction must be reestablished in the radiology department if the patient is allowed to be disconnected for a short amount of time.
• Be aware of double-lumen NG tube considerations when discontinuing suction.
Nasogastric Tube Care and Removal

- Confirm patient ID.
- Obtain informed consent.
- Wash hands and turn off suction apparatus if being used.
- Gently remove tape from around the patient’s nose and make sure it’s free from skin attachment.
- Put on clean gloves and ask patient to take a deep breath as the tube is gently withdrawn.
- Wrap tube in paper toweling and discard.
- Any resistance to withdrawal is cause for immediate stoppage and the attention of supervision or nurse.

Urinals

- Disposable or reusable
- The male urinal is made of plastic or metal and is shaped so that it can be used by a patient who is supine, lying on his right or left side, or in Fowler’s position
- Typically used for ambulatory male patients
- Confirm urine volume if urinary output is being tracked
- Wash your hands and provide for patient hand washing

Bedpans

- Used for defecation and urination
- Hand washing is extremely important and should be performed both before and after assisting the patient with a bedpan
- Respect patient privacy and comfort
- Two designs
Fracture Bedpan Placement

- Fracture bedpan has a unique wedge-shaped design
- Allows patient to elevate hips only slightly for placement
- Convenient handle for placement and removal

Enemas

- Used for bowel cleansing and to promote defecation
- Typically given to patients as outpatients and can be self-administered
- Required for contrast barium enema examination
- In some departments, technologists may administer cleansing enemas to patients the morning of the examination to ensure a good preparation
- Giving enemas until clear means that the enema fluid is expelled with no fecal matter present

Enema Types

1. Tap water (hypotonic)
2. Hypertonic (Fleet enema)
3. Saline (safest—used on infants)
4. Oil retention
5. Soapsuds solution
Self-Administered Enema

- Dietary restrictions, usually in the form of a minimal- or low-residue diet
- Purgation
- Overhydration
- Cleansing water enema

Barium Enema

- Barium enema is administered in an examination used to diagnose pathologic conditions of the colon or lower gastrointestinal tract.
- Barium enema catheter may have a plain tip or an inflatable cuff attached.
- After the tip is inserted the cuff is inflated to hold the catheter in place and to prevent involuntary expulsion of barium.

Barium Enema Tips

Fig. 18-10 Left, Plain barium enema tip. Right, Barium enema tip with an inflatable cuff.
Barium as a Contrast Agent

- High atomic number for optimum contrast
- May be premixed or powder
- Available in a prepared, prepackaged powder, which must be mixed with water, or suspension
- Bag is usually suspended at a greater distance (up to 30 inches) above the table

Double-Contrast Barium Enema

- Gaining widespread popularity
- Used for polyps
- History of colorectal cancer
- Rectal bleeding
- Anything where colon mucosa needs to be visualized
- Barium = Positive agent (white)
- Air = Negative agent (black)

Double-Contrast Enema

- Patient in prone position at exam start
- Radiographic/Fluoroscopic (R/F) table in Trendelenburg position slightly
- Barium administered, followed by air
- Patient turned into various oblique positions to move barium into colon compartments
- More air is administered to contrast with barium adhering to colon mucosa
- Radiographic images are taken to visualize anatomy
Single-Contrast Barium Enema

- Uses larger volume of barium
- Excess barium is drained back into the bag, the tip is removed, and the patient is sent to the toilet to evacuate as much of the barium as possible
- Postevacuation images taken

Barium Enema Assemblies

Double-Contrast Kit  Single-Contrast Kit

Important Patient Concerns

- Please keep tip firmly in the rectum.
- Relax abdominal muscles to reduce intraabdominal pressure.
- Use deep oral breathing to prevent spasms and cramps.
- Cramping may cause a cessation of procedure.
- Try and take patient's attention away from enema.
Barium Enema Considerations

- Exam volumes diminishing because of colonoscopy and CT examinations
- Patient education and communication are critical
- For removal of a rectal catheter that has an inflatable cuff attached, the cuff must be deflated before the catheter is removed.
- When perforation of the bowel is suspected, water-soluble iodine compounds (Gastrografin) are the only acceptable contrast media.
- Barium is naturally hydroscopic and can cause patient dehydration.
- Patient stools are usually gray or white until barium is fully defecated.
- The patient should increase fluid intake and dietary fiber for several days unless medically contraindicated and should be instructed to rest after the examination.
- Postexamination instructions to patients are very important!

Colostomy Patients

- Typically called a “loopogram”
- Wound infection is the most common complication of these procedures
- Contrast administered through a patient stoma
- Pt will have dressing over stoma

Conclusion

- Nonaseptic procedures typically involve examinations of the gastrointestinal tract.
- NG tubes, male urinals, bedpans, enemas, and colostomies are a part of the daily practice of a radiologic and imaging sciences professional.
- Radiographers may assist in inserting NG tubes and are sometimes responsible for their removal.
- Before transporting a patient with an NG tube, the radiographer must ascertain the length of time for which suction may be discontinued.
- Barium enemas may be double or single contrast.
- Cleansing enema preparations are an essential part of colon studies.
- Patients with an ostomy present unique colon exam circumstances, and many of these patients are comfortable with their condition.