Radiographic Procedures III (RAD 228)

Barium Enema
Dual Contrast

Barium Enema or BE (Lower GI Series, Colon)

Purpose: Radiographic examination of the large intestine

- Double-contrast study using air and barium

Air-Barium Distribution in Large Intestine

Air = black  Barium = white

R  Supine  L  R  Prone  L
Barium Enema Contrast

- Dual Contrast
  - Barium sulfate
    - Follow protocol for mixing, thick 75-95% w/v
    - Commercially prepared
  - Room Temp (85 – 90 degrees)
    - Cold water debate
    - Lidocaine, Glucagon for spasmatic control
- Negative agents
  - Air, Nitrogen, Carbon Dioxide

Barium Enema—Patient Preparation

- Light evening meal prior to exam
- Bowel-cleansing cathartics
- NPO after midnight (8 hours minimum)
- No gum chewing
- No smoking
- Enema morning of exam

Enema Tips

- Plastic disposable rectal retention tip
- Inflatable retention balloon
- Air tube for inflating balloon
- End to attach to enema bag
- Tube to introduce air into colon
- Inflated and uninflated retention enema tips.
Dual Contrast BE Procedure

- Scout Abdomen prior to insertion of enema tip
- Fluoro retention tip expansion
- Single Stage
  - Barium followed by negative contrast
- Dual Stage
  - Barium, Air, Drain barium, Air
- Radiologist images
- Post fluoro images
  - Drain, evac
- Post evac images
- Post Exam instructions

Barium Enema Series

- Routine
  - PA and/or AP
  - RAO and LAO (double-contrast)
  - LPO and/or RPO
  - Lateral rectum
  - R and L lat decub (double-contrast)
  - PA postevac

- Special
  - AP axial or AP axial oblique
  - PA axial or PA axial oblique

RAO Barium Enema

- 35°-45° oblique
- CR to iliac crest and 1 inch (2.5 cm) to left of MSP
Evaluation Criteria
RAO Barium Enema
- Right colic flexure, ascending and sigmoid colon are open
- Entire large intestine demonstrated
- Optimal exposure factors

LAO Barium Enema
- 35°-45° oblique
- CR to iliac crest and 1 inch (2.5 cm) to right of MSP

Evaluation Criteria
LAO Barium Enema
- Left colic flexure and descending colon open
- Entire large intestine demonstrated
- Optimal exposure factors
Lateral or Ventral Decubitus
- True lateral
- CR level of ASIS and midaxillary plane
- Prone
- Horizontal beam

Ventral Decubitus—Lateral Rectum

Right Lateral Decubitus
- On cart or table
- CR to iliac crest
Evaluation Criteria
Right Lateral Decubitus
- Entire large intestine demonstrated
- No rotation
- Optimal exposure factors

Evaluation Criteria
Left Lateral Decubitus
- On cart or table
- CR to iliac crest and MSP

Evaluation Criteria
Left Lateral Decubitus
- Entire large intestine demonstrated
- No rotation
- Optimal exposure factors
PA (AP) Postevac

- On cart or table
- CR to iliac crest
- Entire large intestine included
- No rotation
- Optimal exposure factors

BE Colostomy

- Colostomy
  - Surgical formation between two portions of the large intestine
  - Terminal end of intestine is directed through an artificial opening (stoma) on the anterior surface of the abdomen
  - Fecal material is discharged through the stoma into a collection bag attached to the skin over the stoma
  - Temporary or permanent

Clinical Indications & Purpose

- Performed to evaluate the healing process, obstruction or leakage
- May be a pre-surgical evaluation
- Radiologist performs procedure with technologist assistance
- Patient Preparation
  - Same dietary prep as BE
  - Irrigate the ostomy prior to the procedure
  - Bring additional collection bags or irrigation device
BE Colostomy

- Supplies
  - BE Colostomy kit
    - Stoma tips or small retention tip catheter, Tubing
    - Pre-measured BE Bag
    - Adhesive tips
    - Lubricant, Gauze

Lower GI Procedures

- Evacuative proctogram (defecography)
  - Functional study of the anus and rectum during the evacuation and rest phases of defecation
- Clinical indications
  - 1. Rectoceles
  - 2. Rectal intussusception
  - 3. Prolapse of rectum

Evacuative Proctography (Defecogram) Contrast Media

- High-density barium
- Mechanical applicator
- Rectal tubing and tip
- Commode with disposable waste receptacle
Evacuative Proctography
Two-Phase Study

During strain or evacuation

Postevacuation radiograph

Lab Script

- Speak with a CI; bring the following information written or transcribed to lab.
  - Fluoro room set up requirements
  - Patient gownsing instructions
  - All patient questions asked by technologist prior to procedure
  - Exam explanation
  - Contrast media types used & exact preparation
  - Positioning protocol for procedure (Overhead images)
  - Post exam instructions given to patient