# Solid Column Contrast Enema

**PURPOSE / CLINICAL INDICATION:**

- For barium evaluation
  - Disabled, old, or very ill patient unable to perform the maneuvers/rotating on the exam table required for air contrast study
  - Inadequate attempts for bowel preparation (2nd time coming back to the radiology department for inadequate bowel preparation).
  - Clinical indication not requiring mucosal detail
- For water soluble evaluation
  - Suspected colonic fistula/anastomotic leak
  - Bowel is not prepared but limited exam requested to verify or exclude obstruction or volvulus
  - Preoperative planning/evaluation
  - Therapeutic enema for fecal impaction (only after failed cleansing enemas)

**SPECIAL CONSIDERATIONS / CONTRAINDICATIONS:**

- Stay alert and look for lesions during fluoroscopy. A single contrast BE relies on a higher level of fluoroscopic skill.
- Manual or mechanical compression should be applied as appropriate to all accessible segments of colon during fluoroscopy.
- Absolute Contraindications
  - Toxic Megacolon
  - Acute, fulminating colitis
  - Free air on scout image
- Relative Contraindications
  - Following Sigmoidoscopy or Colonoscopy:
    - Need to confirm with the ordering team (if for same day BE request):
      - Any biopsy performed?
      - If yes - Superficial vs. Deep biopsy?
      - If no biopsy performed, same day fluoroscopic enema exams can be attempted.
    - Performance of small forceps endoscopic biopsies (superficial biopsies) does not preclude performance of fluoroscopic contrast enema exam on the same day – These examinations can be performed in individual cases at the radiologist's discretion.
      - There should be a 7 day interval between the fluoroscopic contrast enema exam and performance of large forceps biopsy through a rigid colonoscope, snare polypectomy, hot biopsy or biopsy of any size or type in infectious or active inflammatory bowel disease.

| | ORDERABLE NAME: | EPIC BUTTON NAME: | NOTES: |
|---|---|---|---|
| **UTSW** | XR Barium Enema<br>XR Gastrografin Enema | | |
| **PHHS** | XR Barium Enema Solid Column | Solid column enema | |

**EQUIPMENT / SUPPLIES / CONTRAST:**

- Barium vs Water soluble
- Commercially available contrast enema bag

- Clamp
- K-Y gel/lubricant

**PATIENT PREPARATION:**

- Review for patient allergy
- NPO after midnight
- Prefer full bowel prep if patient tolerance allows
- Question the patient about
    - Relevant symptoms and previous abdominal surgeries
    - Pregnancy, recent colon scope procedure
    - Review prior colonoscopy and radiological exam results
- Explain the procedure to the patient – may need help from interpreter
- Male radiologists/midlevels need a female technologist to chaperone for female patients during rectal exam and rectal tube insertion

**PROCEDURE IN BRIEF:**

- Thin barium suspension or water soluble contrast mixture is administrated for evaluation of the colon under fluoroscopy. No air contrast is introduced.

**COMPLETE PROCEDURE TECHNIQUE:**

- Evaluate scout plain film.
- Patient in Left lateral position:
    - With the patient in the left lateral decubitus position, perform a careful rectal exam checking for mass, stricture, stool, and anal tone. (Have chaperone if required.)
    - Lubricate the enema tip and insert the tip. (Have chaperone if required.)
- Allow contrast to flow by gravity, fill the rectum, and take 1 to 2 spot images of the rectum and sigmoid colon.
    - Always be alert about where the contrast has advanced to during the exam and try to avoid reflux into terminal ileum if possible.
    - If evaluating colonic anastomosis prior to ileostomy takedown, suture lines on scout image will help localize the anastomosis. Evaluate this area carefully for stricture or extravasation. Detailed images of the remainder of the colon are not necessary — 2 to 4 images to document the remainder of the colon will suffice.
    - If evaluating for possible fistula – fill the entire colon with water soluble contrast then inspect the suspected region, sometimes small fistula won't show up till there is enough pressure from a filled colon.
        - If area of suspicion is rectum, we do not need all the detailed digital images for the remainder of the colon. Need 2 to 4 large field unmagnified images to document the remainder of the colon.
- Inflate the retention balloon.
    - The inflatable cuff must not be inflated in any patient known to have a disease of the rectum that would limit its distensibility including rectal anastomosis, rectal mass, ulcerative colitis, radiation colitis, known stricture, recent biopsy and Crohn's disease involving the rectum.
- Rectosigmoid region images to be obtained early because possible reflux of contrast into the terminal ileum may obscure this area.
- Turn the patient to supine and oblique positions and take spot images of contrast filled colon.
- Manual or mechanical compression (with paddle) should be applied as appropriate to all accessible segments of colon during fluoroscopy.
- Look for persistent filling defects/mass, strictures, fistulas and contrast leak during the real time

fluoroscopy exam.

- Cecum: Spot images of distended cecum in the RPO and LPO positions.
  - Compression with paddle can be helpful.
  - Complete cecal filling is confirmed by identifying at least one of the 3 landmarks: appendix, appendiceal stump, or ileocecal valve.
  - If "air lock" forms in the cecum and will not fill with barium, turn the patient to right lateral position.
- Take additional images of any region which was not well distended initially.
  - Compression with paddle can be helpful.

**IMAGE DOCUMENTATION:**

- Spot images needed:
  - Rectum: Left lateral decubitus (before inflating balloon)
  - Rectosigmoid: prefer LPO, Supine AP, and/or RPO
  - Descending Colon: prefer RPO
  - Splenic flexure: prefer RPO
  - Transverse colon: prefer supine AP
  - Hepatic flexure: prefer LPO
  - Ascending colon: prefer LPO
  - Cecum: prefer LPO and RPO
  - Additional: abnormalities, initially poorly distended segments, terminal ileum if available
- Overhead images needed:
  - Scout AP supine abdomen/pelvis
  - Supine AP view to include rectum
  - LPO view to include flexures
  - RPO view to include flexures
  - Optional: post evacuation– for suspected fistula (prefer PA prone)

**ADDITIONAL WORKFLOW STEPS:**

- Quality assurance indicators:
  - Compression views may be helpful
  - Each accessible segment of the colon is seen during fluoroscopy, minimizing overlap of the colon loop

**REFERENCES:**


- General Fluoroscopy Considerations
- Procedure Contrast Grid
- ACR Practice Parameter for the Performance of Fluoroscopic Contrast Enema Examinations in Adults, amended 2014
- Bowel Preparation Reference


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