Air Contrast Barium Enema

PURPOSE / CLINICAL INDICATION:

- Incomplete colonoscopy
- Colon cancer or polyps– suspected or known
- Inflammatory bowel disease – suspected or known
- Diverticular disease (not acute setting)
- Any colonic mucosal irregularity/disease
- Evaluation of questionable findings on other imaging exams such as CT scanning
- History and symptoms of – Abdominal pain, Diarrhea, Constipation, Changes in bowel habits, Rectal bleeding, Anemia, Weight Loss, Family history of colon disease

SPECIAL CONSIDERATIONS / CONTRAINDICATIONS:

- Absolute Contraindications
  - Toxic Megacolon
  - Acute, fulminating colitis
  - Free air/pneumoperitoneum 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.
  - Combative, uncooperative patients
  - Incomplete bowel preparation

	ORDERABLE NAME:	EPIC BUTTON NAME:	NOTES:
UTSW	XR Barium Enema Air Contrast		
PHHS	XR Barium Enema Air Contrast XR Barium Enema – Screening Colon	ACBE – DX ACBE – Screen	

EQUIPMENT / SUPPLIES / CONTRAST:

- Commercially prepared high density barium sulfate suspension (see contrast guide)
- Commercially available contrast bag with enema tip and insufflator
- Lubricant gel (for rectal physical exam and insertion of rectal tube)

PATIENT PREPARATION:

- Review for contrast allergy
- Overnight bowel preparation (see prep guide)
- NPO after midnight except medications (may take with small amount of water)

- Question the patient about
  - Relevant symptoms and previous abdominal surgeries
  - Pregnancy, recent colon scope procedure, and bowel prep
  - Review prior colonoscopy and radiological exam results
  - Assessment of bowel prep (last movement should be watery and clear)
- 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:

- Entire colon is examined fluoroscopically after introduction of barium and air contrast. Adequate contrast coating is achieved with patient's cooperation, then images obtained.

COMPLETE PROCEDURE TECHNIQUE:

- Evaluate scout plain film of abdomen
  - Relative contraindications – stool or contrast material in colon
  - Absolute contraindications – free air
  - Evaluate amount of air contained in the colon
    - Large air in the right colon will generally requires the introduced barium contrast to reach more proximal level before draining it
- With the patient in the left lateral decubitus position, perform a careful rectal exam checking for mass, stricture, stool, and anal tone.
- Lubricate the enema tip and insert the tip.
- The inflatable cuff must not be inflated in any patient known to have a disease of the rectum that would limit its distensibility.
  - The device is contraindicated in rectal carcinoma, rectal anastomosis, ulcerative colitis, radiation colitis, known rectal stricture and Crohn's disease involving the rectum.
  - Cuffs sometimes do not need to be inflated in young patients who are reliable and can hold contrast by clenching buttocks.
- Patient in supine position.
- Use intermittent fluoroscopic evaluation to make sure the barium contrast reaching the mid transverse colon.
  - Consider tilting head down to facilitate contrast movement.
- Turn the patient to Right Lateral Decubitus position – encouraging advance of the barium contrast to reach the right colon, and help with barium contrast draining from the distal colon (dropping the barium bag below the level of the patient).
- Start introducing air after the barium bag is closed with patient in RLD position. Make sure the barium contrast advances to the right colon.
  - Obtain early rectosigmoid images as contrast in the cecum and terminal ileum can obscure this region.
  - Consider tilting head up to facilitate contrast movement into the cecum.
- If having difficulty coating the colon when reaching the cecum or right colon, try to rotate the patient 360 degrees 1 to 2 times.
  - This usually helps coating and moving the barium contrast more proximally.
- Spot images of the hepatic/splenic flexures can be performed with patient in near upright position (table elevated 60 - 80 degrees from horizontal position).
  - Use caution during upright position, vasovagal response of the patient can happen though rarely encountered.
- Spot images of the ascending and descending colons can also be obtained if adequately distentended

IMAGE DOCUMENTATION:

- Spot images needed:
  - Rectum/sigmoid - lateral (including the pre-sacral region)
  - Sigmoid colon - LPO, RPO, and prone
  - Descending colon – RPO
  - Splenic flexure – near upright RPO
  - Hepatic flexure – near upright LPO
  - Transverse colon – supine
  - Ascending colon – LPO
  - Cecum – Supine, LPO
- Overhead Films:
  - Scout AP supine abdomen/pelvis
  - Right and left lateral decubitus (cross table)
  - Lateral rectum (patient prone, cross table)
  - Slant view of the sigmoid

ADDITIONAL WORKFLOW STEPS:

- Quality assurance indicators:
  - Adequate barium coating of the entire colon
  - Colon is well distended with air
  - Each segment of the colon is seen in double contrast, with abnormal findings documented on at least 2 positions
- Complete visualization of entire colon is assured through demonstration of the ileocecal valve, terminal ileum, or appendix

REFERENCES:

- General Fluoroscopy Considerations
- Procedure Contrast Grid
- Bowel preparation regime
- ACR Practice Parameter for the Performance of Fluoroscopic Contrast Enema Examinations in Adults, amended 2014
- Rubesin SE, Levine MS, Laufer I, Herlinger H. Double-contrast barium enema examination technique. Radiology 2000;215:642-650.

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