Radiology Techniques Department

Special Radiological Procedures-1

lecture 6

Barium Enema

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Barium Enema

A barium enema is a radiographic (X-ray) examination of the lower gastrointestinal (GI) tract (large intestine) .

Parts of large intestine:

1. Cecum 2. Ascending colon 3. Transverse colon 4. Descending colon
5. Sigmoid colon 6. Rectum and .7Anal canal.

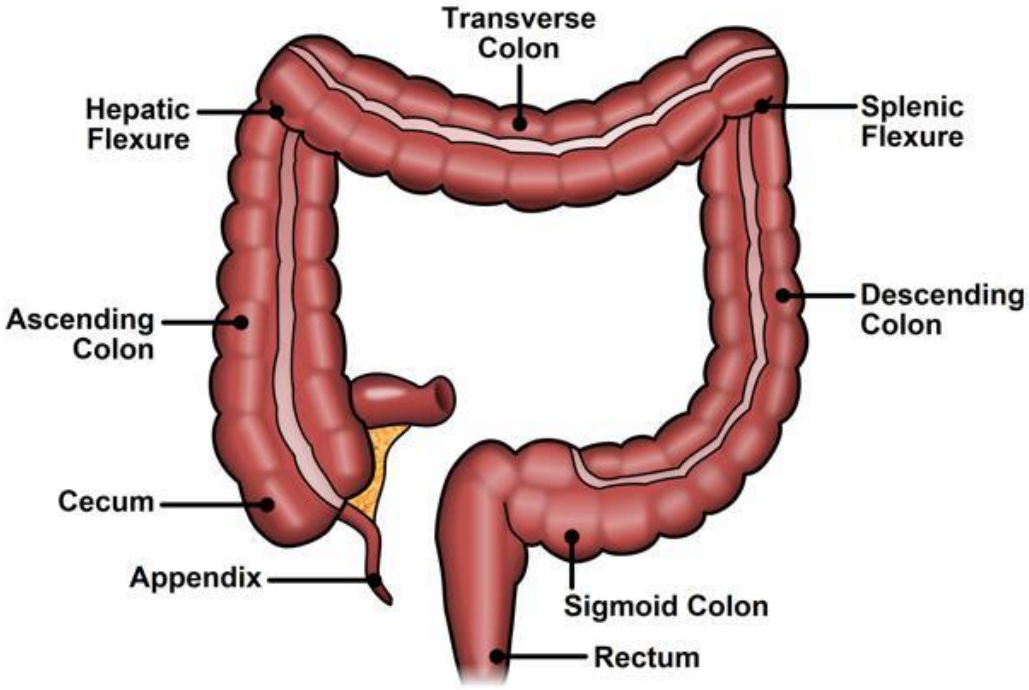

Figure (1). Parts of large intestine

Methods

1. Double contrast— (mucosal lesions).

2. Single contrast—uses:

(a) Localization of an **obstructing** colonic lesion (use water-soluble contrast)

(b) Children

(c) Reduction of an intussusception

Indication

1. Diverticula
2. Chronic diarrhea
3. Chronic constipation
4. large bowel pathology
5. Rectal bleeding

Contraindications

Absolute

1. Toxic megacolon (It's a widening of the large intestine that develops within a few days and can be life-threatening examined by CT)

2. inflammation of the large intestine

3. Recent biopsy

Relative

1. Incomplete bowel preparation.

2. Recent barium meal. It is advised to wait for 7–10 days.

3. uncooperative patient

Contrast Medium

1. Barium 115% w/v 500 mL (or more, as required)

2. Air

Equipment

Disposable enema tube and pump.

Patient Preparation

1. Need to completely empty of the bowel
2. The bowel preparation
   a. **For 3 days before the test_____** low-residue diet**.**
   b. **One day before the test_____** fluids only
   c. **Midday_____** take a laxative
   d. **At midnight _____** stop drinking or eating

Preliminary Film

To ensure good preparation

Technique

The double-contrast method:

1. The patient **lies** on their **left side**; the catheter is inserted gently into the rectum. It is taped firmly in position. Connections are made to the barium reservoir and the hand pump for injecting air.

2. An **i.v.** injection of Buscopan (20 mg) or glucagon (1 mg) is given.

3. The **infusion of barium is commenced**. Intermittent screening is required to check the progress of the barium, with a **table tilt** of **10 degrees head down**.

4. The **barium is run** to **proximal sigmoid** in the **left lateral position**.

5. Repositioning from **left lateral to prone** may be required to **examine** a **tortuous sigmoid colon**.

6. The patient is **returned** to the **left lateral** position to **fill the descending colon to the splenic flexure.**

7. **Contrast is run to the hepatic flexure** in the **prone position** until it tips into the right colon when barium administration should be paused. (Gentle puffs of air may be needed to encourage the barium to flow to the caecum.)

8. The patient rolls onto the right and quickly onto the back. An adequate amount of barium in the right colon is confirmed with fluoroscopy. The column of barium within the distal colon is run back out by either lowering the infusion bag to the floor or tilting the table to the erect position.

9. Air is gently pumped into the bowel to produce the double-contrast effect. CO2 gas has been shown to reduce the incidence of severe, postenema pain.

Films

1. Left lateral rectum
2. RAO sigmoid
3. LPO sigmoid
4. AP view (supine) of whole colon.
5. Left lateral decubitus
6. Right lateral decubitus
7. Prone angled view of rectosigmoid

Complications (All Are Rare)

1. Cardiac arrhythmias induced by Buscopan or the procedure itself (may cause death).

2. Perforation of the bowel often due to the rectal catheter balloon (may cause death)

3. Transient bacteraemia.

4. Side effects of the pharmacological agents used.

Aftercare (As for barium meal and follow through)