Radiology Techniques Department

Special Radiological Procedures-1

lecture 5

Barium Follow Through

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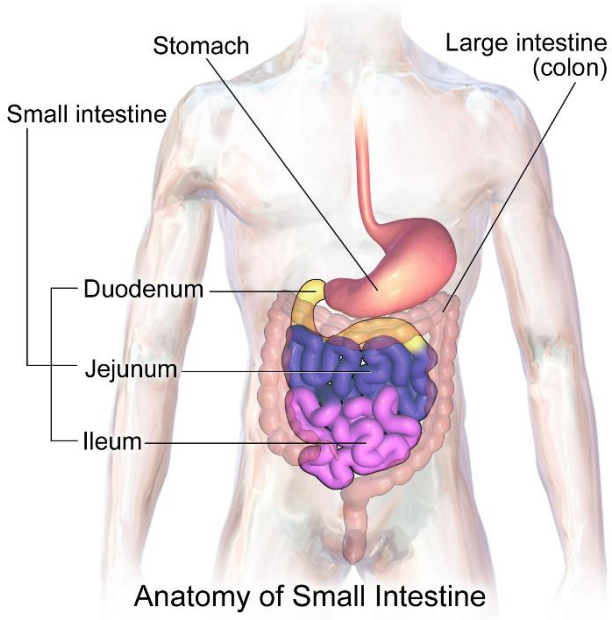
Barium Follow Through

Barium Follow Through is a radiological examination of the small intestine.

Small Intestine: The upper part of the intestine, between the stomach and the large intestine, that is divided into the duodenum, the jejunum, and the ileum.



Anatomy of Small Intestine

Methods

1. Single contrast

2. With the addition of an effervescent agent

3. With the addition of a pneumocolon technique

Contraindications

1. Complete or high-grade obstruction is better evaluated by CT examination.

2. Suspected perforation is better evaluated by CT.

Indications

1. gastrointestinal bleeding (GI bleeding)

2. Partial obstruction

3. Malabsorption, or diarrhea or pain with weight loss

4. diverticula

5. Small bowel adhesive obstruction (water soluble contrast)

Contrast Medium

Barium E-Z Paque100% w/v.

In adult 300 mL (or as required) usually given divided over 20 min.

In children, 3–4 mL kg−1 is a suitable volume.

The transit time through the small bowel is **reduced by the addition** of 10 mL of water-soluble contrast agents (frequently Gastrografin) to the barium. (if patient with small bowel adhesive obstruction use water-soluble contrast agents as Gastrografin or LOCM)

Patient Preparation

1. Patient fasting at midnight.
2. Maxolon 20 mg orally may be given before or during the examination to enhance gastric emptying.

Preliminary Image

If vomiting, a plain abdominal film should be performed to exclude high-grade small bowel obstruction.

Technique

The aim is to deliver a **single continuous column of barium** into the small bowel. This is achieved by the addition of 10 mL of Gastrografin to the barium solution and the patient lying on their right to **enhance gastric emptying.**

If a follow-through examination is combined with a barium meal, glucagon can be used for the duodenal cap views **rather than** Buscopan, **because** it has a short length of action and does not interfere with the small-bowel transit time. **Normal small bowel transit** ranges between 30-120 minutes

Images

1. Prone PA images of the abdomen are taken every 15–20 min during **the first hour**, and **subsequently** every 20–30 min until **reached to the colon.** The prone position is used because the pressure on the abdomen **helps** separate the loops **of the small bowel**.

2. Each image should be reviewed and spot supine fluoroscopic views, using a compression device or pad if appropriate, may be considered.

3. Dedicated spot views of the terminal ileum are routinely acquired.

Additional Images

1. To separate loops of the small bowel:

(a) compression with fluoroscopy

(b) with x-ray tube angled into the pelvis

(c) obliques—in particular with the right side raised for **views of the terminal ileum**

(d) pneumocolon—gaseous insufflation of the colon via a rectal tube after barium arrives in the caecum, which often results in good-quality double-contrast **views of the terminal ileum**

2. Erect image—Occasionally used **to reveal any fluid levels** caused by contrast medium **retained within diverticula**.

Aftercare (As for barium meal)

1. Patient warned about white stool

2. Patient not leave before blurring by buscopan is revealed

3. Eat and drink as normal but with extra fluids

Complications (As for barium meal)

1. Leakage of barium from an unsuspected perforation

2. Aspiration

3. Conversion of a partial large bowel obstruction into a complete obstruction by the impaction of barium

4. Barium appendicitis (very rare)

5. Side effects of the pharmacological agents used