



Radiology Techniques Department
Special Radiological Procedures-1

lecture 4

Barium Meal

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Barium meal

Barium meal is a radiological examination of the stomach, duodenum, distal esophagus, & gastroesophageal junction.

Parts of the stomach

1. Cardiac
2. Fundus
3. Body
4. antrum
5. pylorus
6. Lesser curvature and great curvature.

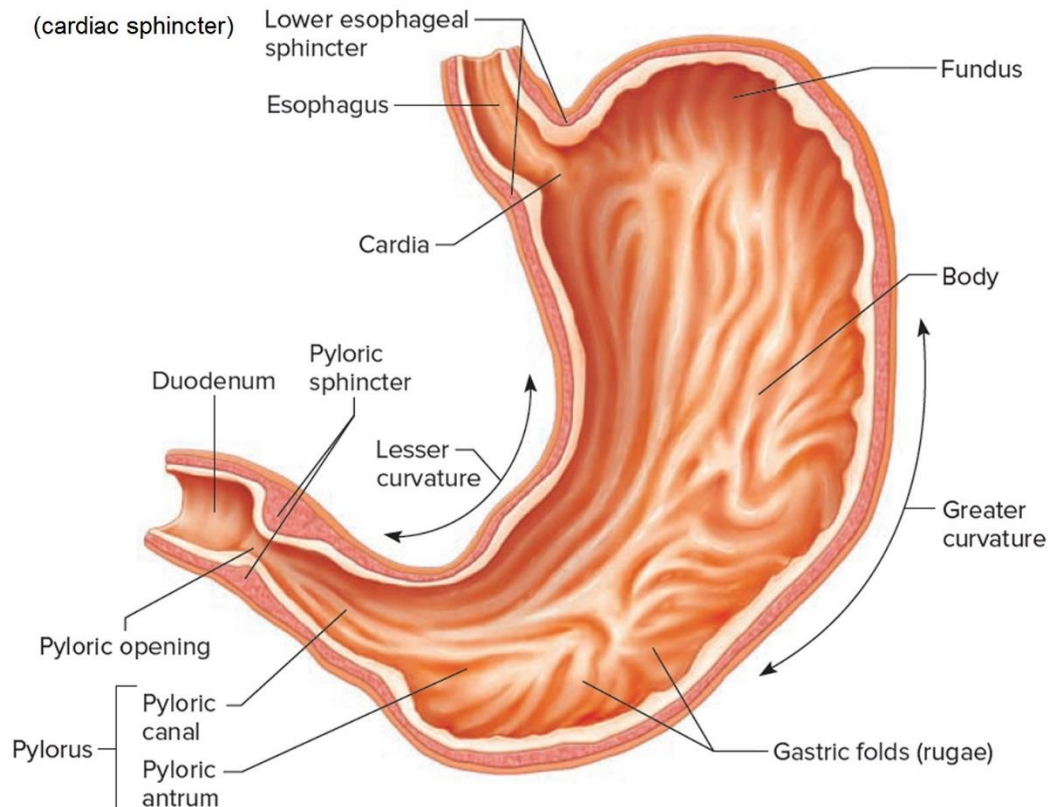


Figure (1). Parts of the stomach

Methods:

- 1-Double contrast (mucosal lesions).
- 2-Single contrast (children & intra-luminal gross pathology)

Indications

1. Failed upper gastrointestinal GI endoscopy
2. Gastro-oesophageal reflux
3. Peptic ulcer (gastric ulcer)
4. Hiatus hernia
5. Dyspepsia
6. Partial obstruction
7. Gastrointestinal hemorrhage (GI bleeding)

Contraindications

Complete large-bowel obstruction.

Contrast Medium

1. **Barium** E-Z HD 250% w/v 135 mL (or more, as required)
2. **Carbex granules CO₂** (if used **double contrast** technique)

Patient Preparation

1. Fasting for 6 hours before the examination
2. Assess contraindications to the pharmacological agents if used

Preliminary Image -None.

Technique

The double contrast method

1. A gas-producing agent is swallowed.
2. The patient then **drinks the barium** while **lying** on the **left side**, supported by their elbow. This position **prevents the barium from reaching the duodenum too quickly**, thus obscuring the greater curve of the stomach.
3. The patient then **lies supine** and **slightly on the right side**, to bring the barium up against the gastro-oesophageal junction to check for **reflux**, which may be revealed by asking the patient to **cough or to swallow water** while in this position (**the ‘water siphon’ test**).
4. An i.v. injection of a smooth muscle relaxant (**Buscopan 20 mg** or **glucagon 0.3 mg**) may be given to **better distend the stomach** and to **slow down the emptying of contrast into duodenum**.
5. The patient is asked to **roll** onto the right side and then quickly over in a complete circle, to finish in a **RAO** position. This roll is performed to coat the gastric mucosa with barium. **Good coating** has been achieved if the **areae gastricae** in the **antrum** are visible.

Films:

1. Stomach (lying):

- (a) **RAO**—the antrum and greater curve
- (b) **Supine**—the antrum and body

(c) **LAO**—lesser curve en face

(d) **Left lateral tilted head up 45 degrees**_ the fundus

2. **Duodenal loop (lying):**

(a) **Prone**—The patient lies on a compression pad to prevent barium from flooding into the duodenum.

3. **Duodenal cap (lying):**

(a) Prone (b) RAO (c) Supine (d) LAO

4. **Erect position**_ if there is suspicion of a fundal lesion.

5. **Erect (RAO) position**_ the oesophagus

Aftercare

1. Eat and drink as normal but with extra fluids
2. Patient warned about white stool
3. Patient not leave before blurring by buscopan is revealed if used

Complications

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 if used