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Sciences

Second years

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HEALTH CARE

Digestive System radiology



Indications for imaging

An upper GI examination helps evaluate digestive function and to detect:

- Ulcers.**
- Tumours.**
- Inflammation of the esophagus, stomach and duodenum.**
- Hiatal hernias.**
- Blockages.**
- Abnormalities of the muscular wall of GI tissues.**
- Difficulty swallowing.**
- Blood in the stool (indicating internal GI bleeding).**

Indications for imaging

The lower GI examination helps evaluate digestive function and to detect:

- Tumors.
- Causes of other intestinal illnesses.
- Chronic diarrhea.
- Blood in stools.
- Constipation.
- IBS irritable bowel syndrome.
- Unexplained weight loss.

Contraindications for Ba meal examinations

- Contraindications for meal examinations apply primarily to the type of contrast media used. If the patient has a history of bowel perforation, laceration, or rupture of the viscus, the use of barium sulfate may be contraindicated. An oral, water-soluble, iodinated contrast medium may be used in place of barium sulphate

Patients Preparation

For upper GI tract:

- To ensure the best possible image quality, stomach must be empty of food.
- Women should always inform their physician or x-ray technologist if there is any possibility that they are pregnant.

PATIENT PREPARATION FOR Ba Meal

- The goal of patient preparation for meal is for the patient to arrive in the radiology department with a completely empty stomach. For an examination scheduled during the morning hours, the patient should be **NPO** from midnight until the time of the examination. Food and fluids should be withheld for at least 8 hours prior to the exam. **The patient also is instructed not to smoke cigarettes or chew gum during the NPO period.** These activities tend to increase gastric secretions and salivation, which prevents proper coating of barium to the gastric mucosa.

Patients Preparation

For lower GI tract:

- On the day before the procedure you will likely be asked not to eat, and to drink only clear liquids.
- Women should always inform their physician or x-ray technologist if there is any possibility that they are pregnant.

Contrast Media



Barium Sulphate

*If the patient is female, then a menstrual history must be obtained. Irradiation of an early pregnancy is one of the most hazardous situations in diagnostic radiography.

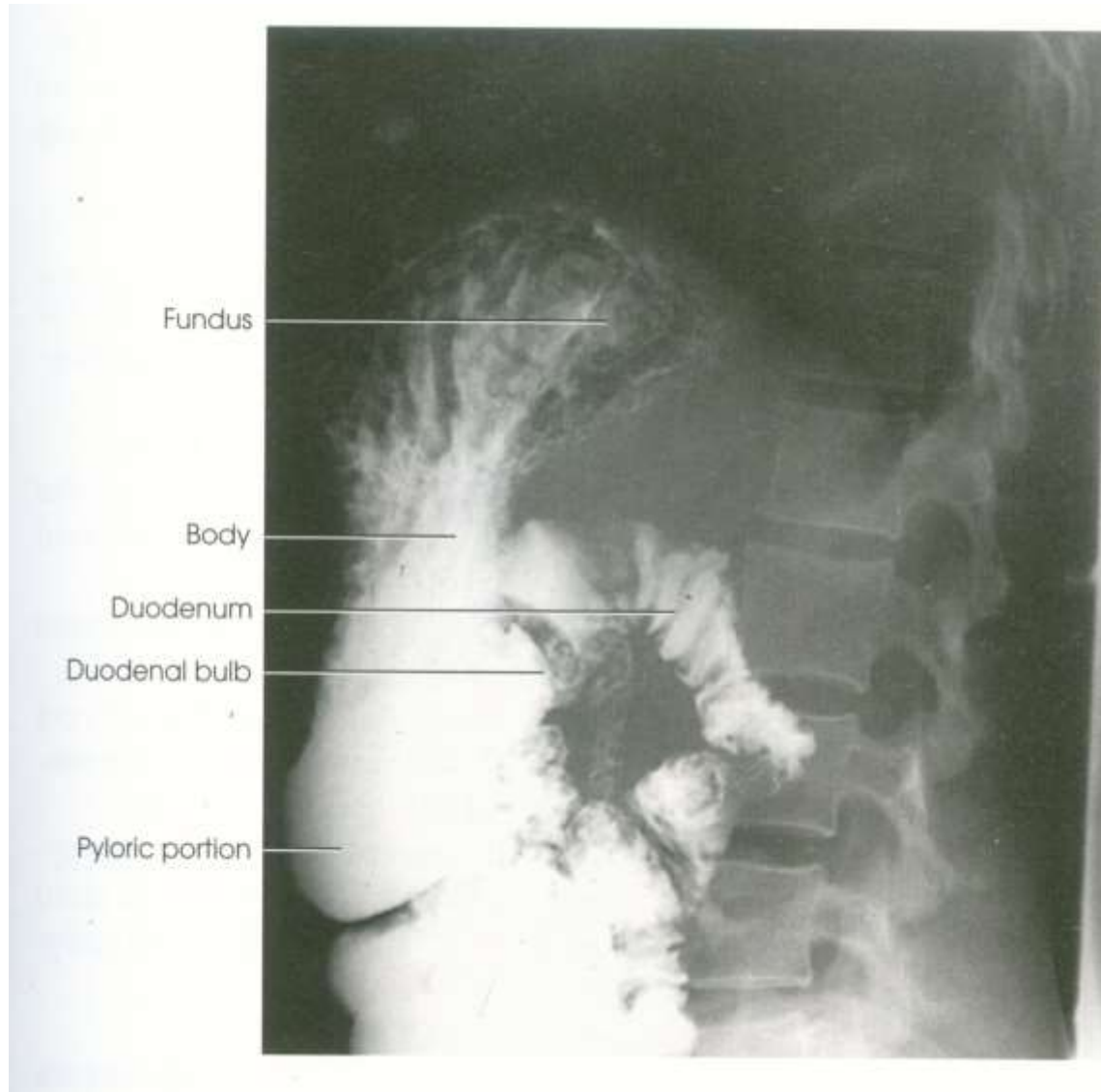
*X-ray examinations such as the upper GI series that include the pelvis and the uterus in the primary beam as well as fluoroscopy should be done on pregnant females only when absolutely necessary.

*In general, abdominal radiographs of a known pregnancy should be delayed at least until the third trimester or, if the patient's condition allows (as determined by the physician), until after the pregnancy. This waiting period is especially important when fluoroscopy, which greatly increases patient exposure, is involved.

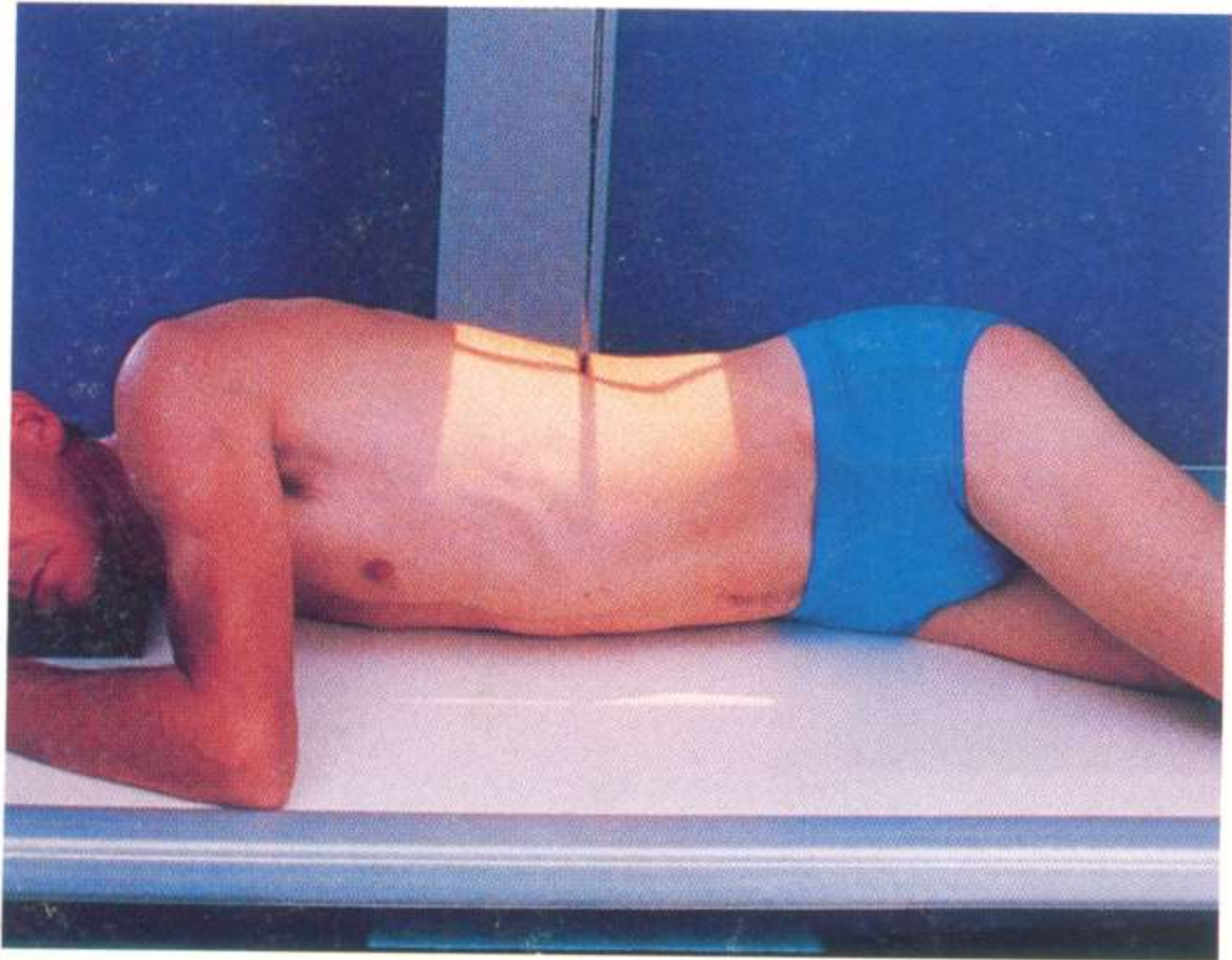
Stomach Radiograph y

**Especial Radiographic Examination of the
Stomach Name as Barium Meal**

Room setup for a Ba mealis very similar to that for an esophagram. The thin barium sulfate mixture is the usual contrast medium necessary for an upper GI series. On occasion, thick barium may be used in addition to some type of gas-forming preparation. On rare occasions, water-soluble contrast media are used in preference to the barium sulfate mixture.



Barium Meal, Rt. Anterior Oblique Position



Esophagus

Fundus

Body

Pylorus

Duodenum



Barium Meal, Lt. Posterior Oblique Position

*Large
Intestine
Radiograph
y*

**Especial Radiographic Examination of the Large-
Intestine Name as Barium Enema**

Barium Enema (BE or Lower GI Series)

Definition;

The radiographic study of the large intestine is commonly termed a *barium enema*. It requires the use of a contrast media to demonstrate the large intestine and its components.

Purpose

- The purpose of the barium enema is to radiographically study the form and function of the large intestine to detect any abnormal conditions.
- Both the single-contrast and the double-contrast barium enema include a study of the entire large intestine.

PATHOLOGIC INDICATIONS (BARIUM ENEMA)

- Colitis
- Ulcerative colitis.
- Diverticulum mu-:.
- Neoplasms
- Volvulus (*vol'vu-lus*) is a twisting of a portion of the intestine on its own mesentery, leading to a mechanical-type obstruction..

Contra indication

-The two strict contraindications for the barium enema are possible perforated hollow viscus and a possible large bowel obstruction.

-These patients should not be given barium as a contrast media agent.

-The barium enema is generally not performed in cases of acute appendicitis due to the danger of perforation.

-Patient had a sigmoidoscopy or colonoscopy before the barium enema.

Patient Preparation

The section of alimentary canal to be examined must be empty. Thorough cleansing of the entire large bowel is of paramount importance to the satisfactory contrast-medium study of the large intestine. (Laxatives -enema wash-)

Contra indication of Laxatives are:

(1) gross bleeding,

(2) severe diarrhea,

(3) obstruction, and

(4) inflammatory conditions such as appendicitis

Contrast Media

- Barium sulphate.
- Air or carbon dioxide.
- Water-soluble iodinated contrast media

Radiography of the Large Intestine

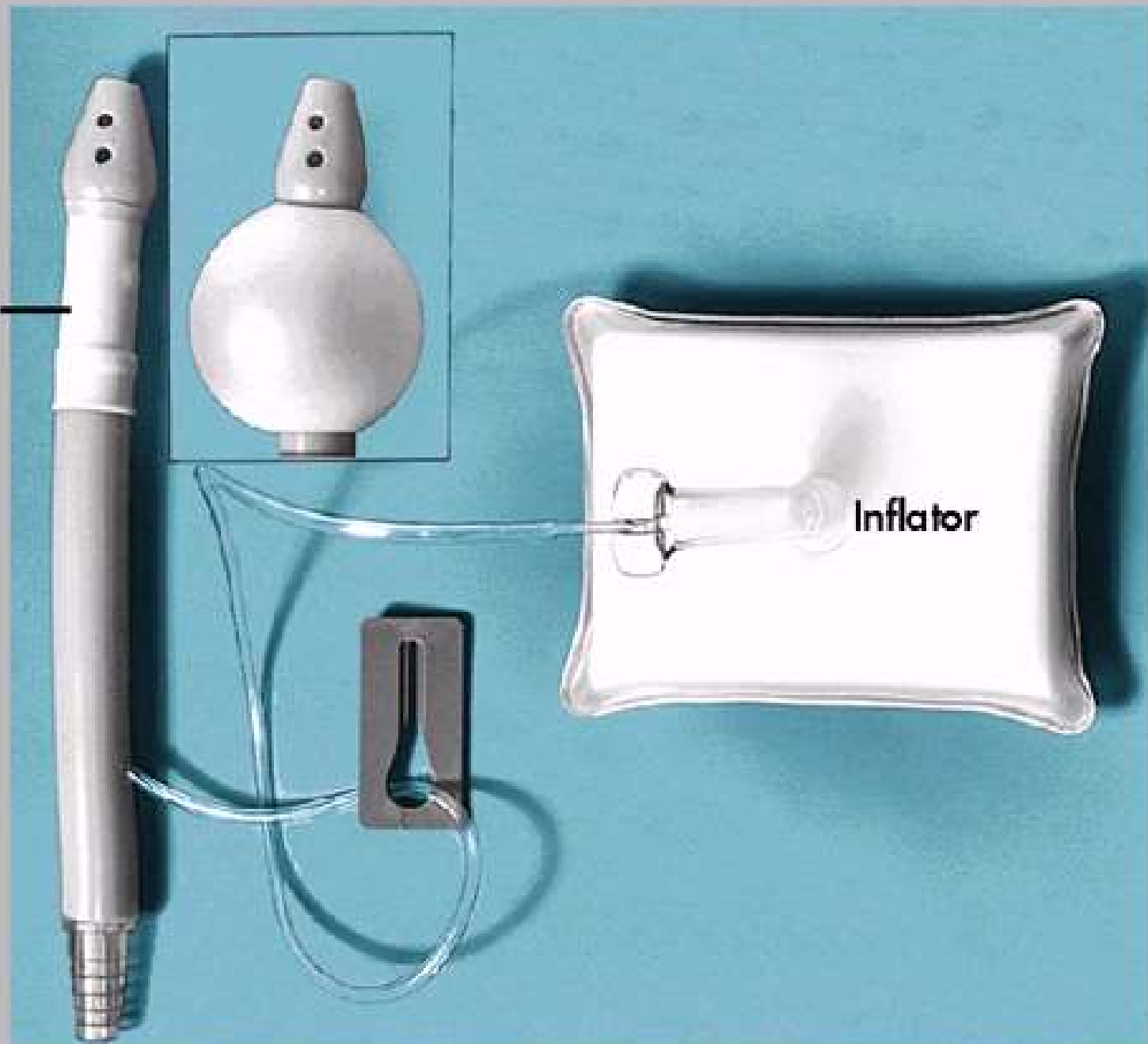


SINGLE CONTRAST

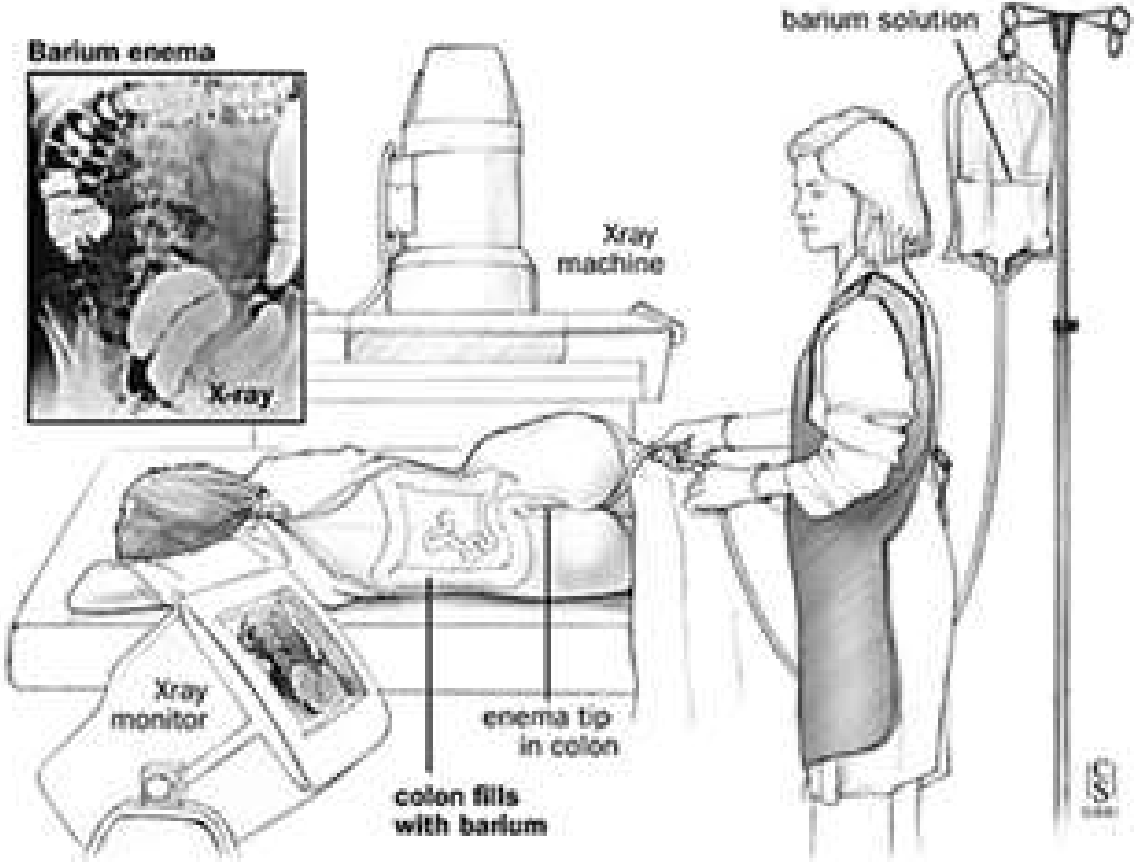


DOUBLE CONTRAST

Retention
tip
uninflated



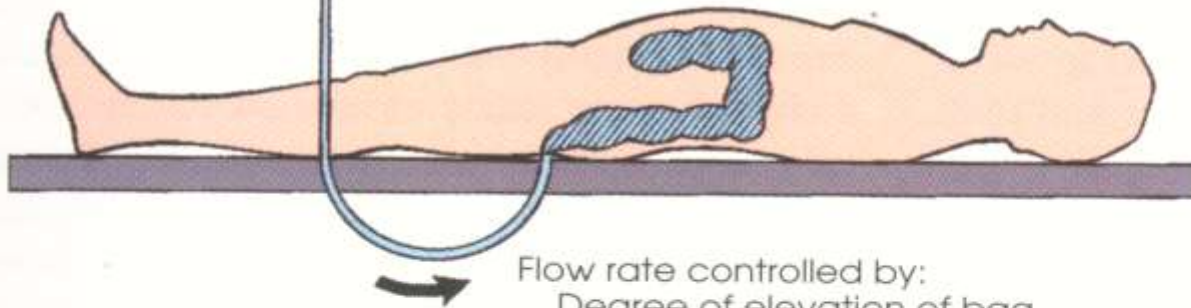
Barium enema



Filling colon with barium



A. Insertion of enema tip creates closed system.



Flow rate controlled by:
Degree of elevation of bag
Gentle manual pressure on bag
Pressure cuff (when thicker mixture is preferred)
Incorporated filter that prevents passage of clumps into tubing.

THE END...



■ Any Questions?