



SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT OF RADIOGRAPHY AND IMAGING TECHNOLOGY

COURSE NAME : CONTRAST AND SPECIAL RADIOGRAPHY PROCEDURES

II YEAR

UNIT : 2

TOPIC : BARIUM SWALLOW



INTRODUCTION



It is the radiographic examination of the upper gastrointestinal tract. The barium swallow is performed to diagnose the structural and functional abnormalities of the pharynx, esophagus and proximal stomach by using the barium sulfate contrast media. It may be performed as a single or double contrast study in the radiology department.

The barium swallow examination may be performed by two methods:

- > **Single Contrast Study** – Single contrast study is performed for the evaluation of esophageal motility disorders and luminal abnormalities.
- > **Double Contrast Study** – Double contrast study is performed for evaluation of the mucosal details of the esophageal wall.



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INDICATION



- Dysphagia (difficulty in swallowing).
- Abdominal pain.
- Blood in vomits.
- Unexplained weight loss.
- Hiatus hernia.
- Esophageal carcinoma.
- Esophageal ulcer and polyps.
- Gastro esophageal reflux disease.
- Diverticulum (outpouching sac of the wall).

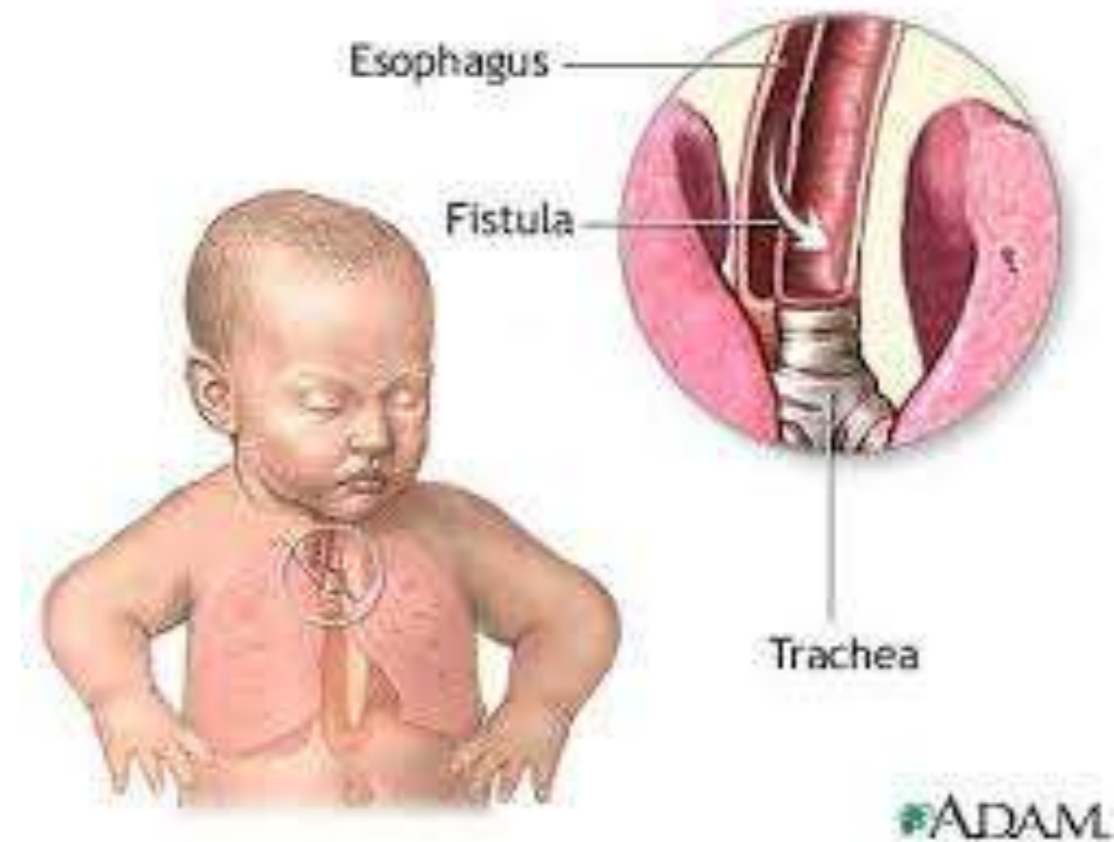




CONTRAINDICATION



- Recent gastric or esophageal surgery.
- Tracheoesophageal fistula (in tracheoesophageal fistula, barium sulfate may enter into the bronchial tree).
- Esophageal perforation (hole in the wall).
- Suspected pregnancy.
- Complete bowel obstruction.





PATIENT PREPARATION



- No special preparation is required.
- Fasting may be employed for 2 hours prior to the examination. The patient is asked not to eat or drink before the procedure.
- The patient is instructed not to smoke or eat chew gum because it prevents the proper coating of barium sulfate on the mucosa.





EQUIPMENT



- Fluoroscopic unit with tilting table attached image intensifier or spot film device/high – speed cassettes.
- The thin density of Barium sulfate suspension for single contrast study.
- The thick density of Barium sulfate suspension for double-contrast study.
- Effervescent powder (gas – producing agent) for double-contrast study.





PROCEDURE



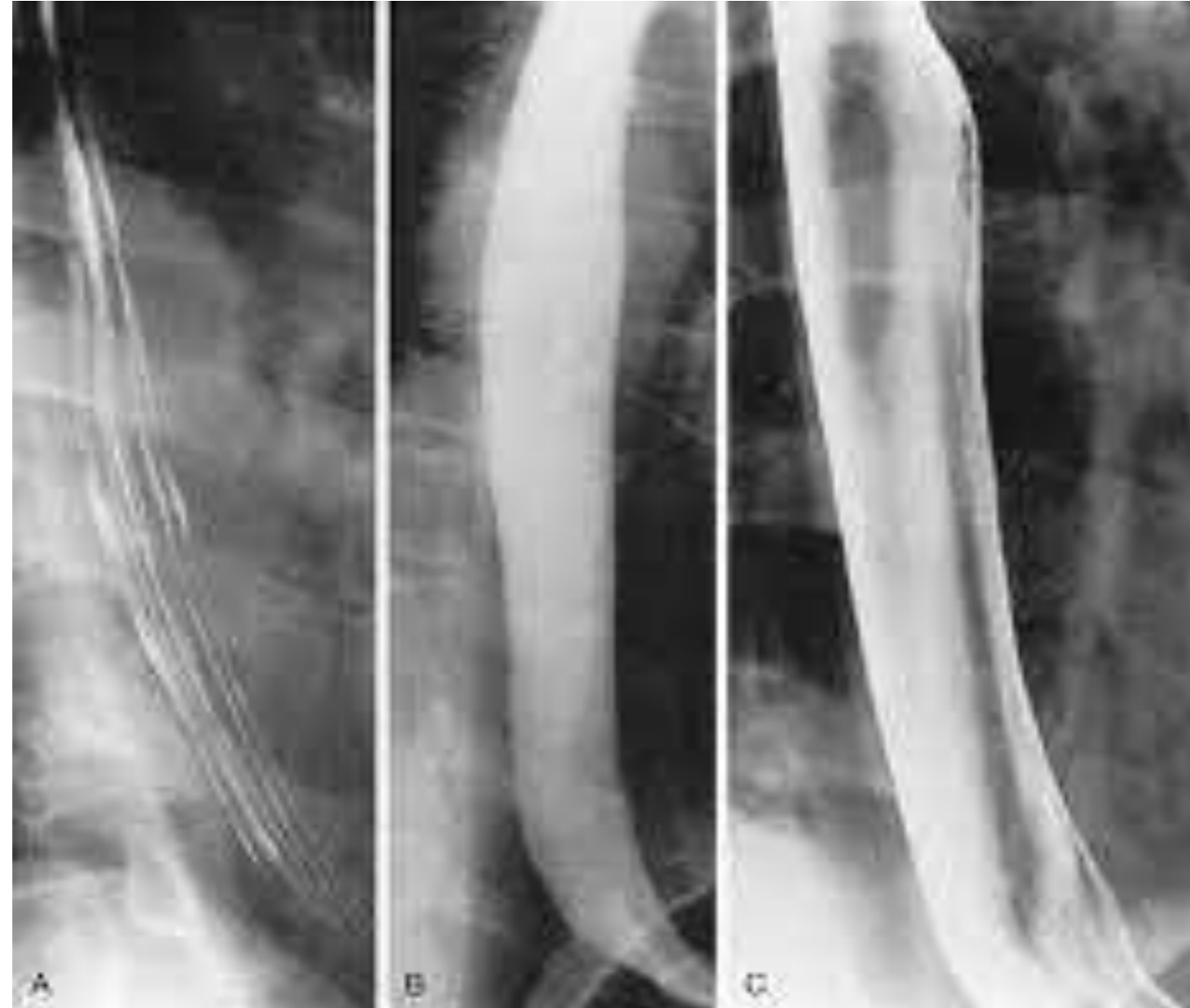
- On the day of the examination, the technologist should describe the whole procedure to the patient and obtain written consent from the patient for permission of procedure.
- The patient is asked to remove clothing and wear a hospital gown.

– SINGLE CONTRAST STUDY

- The patient is placed in an upright position. Then the head is turned behind the fluoroscopic screen then the patient is instructed to take 10 to 15 ml barium sulfate (one mouthful) and swallow it. The passage of barium is examined by the radiologist under the fluoroscopy machine.
- After then, the patient is asked to take several mouthfuls of barium sulfate and swallow it.
- During the swallowing, the radiologist observes the passage of barium under fluoroscopy screen, and if necessary, spot films are taken in AP, RPO and LPO position. All exposure should be made in suspended respiration.
- Again several mouthfuls of barium sulfate are given to the patient and full-length films are taken through the spot film device. The films are taken from the pharynx to the cardiac orifice of the stomach before the esophagus empties.



Single contrast study





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–DOUBLE CONTRAST STUDY

- The patient is placed in the upright position, then an injection of hypotonic agent buscopan or glucagon is given to the patient. After the injection, one mouthful of high-density barium sulfate is given to the patient and asks to swallow. The passage of barium is examined by the radiologist under the fluoroscopy machine.
- After then the effervescent powder is given with another mouthful of barium sulfate. The patient is instructed not to burp after swallowing the barium. The radiologist observes the passage of barium under fluoroscopy, and spot films are taken during adequate distension of the esophagus in AP, RPO and LPO positions.



Double contrast study





AFTER CARE



- The patient is advised to increase the fluid intake to avoid constipation.
- Inform the patient about the feces will be whitish for two days.
- The patients will be allowed to leave the examination room after completion of the examination.





FILMING



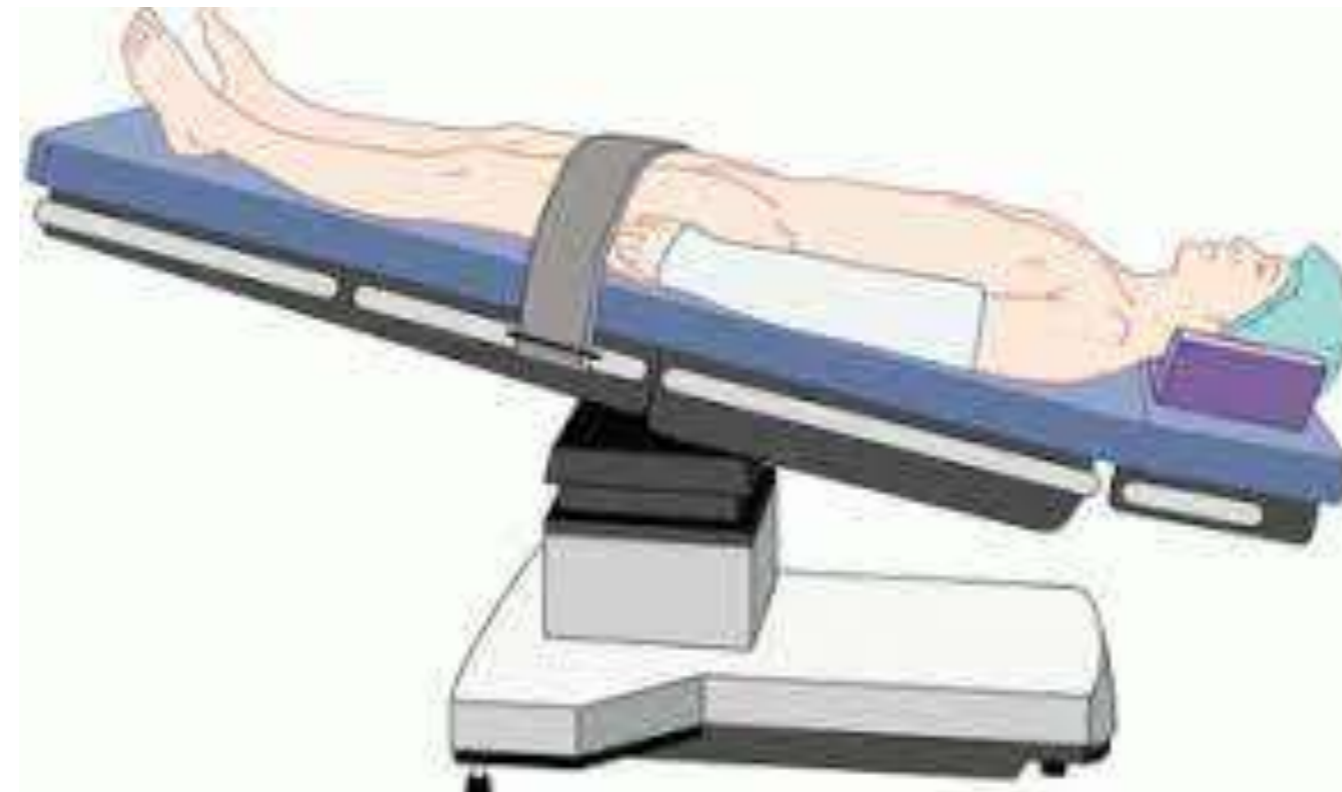


SPECIAL PROJECTIONS



- **HIATUS HERNIA**

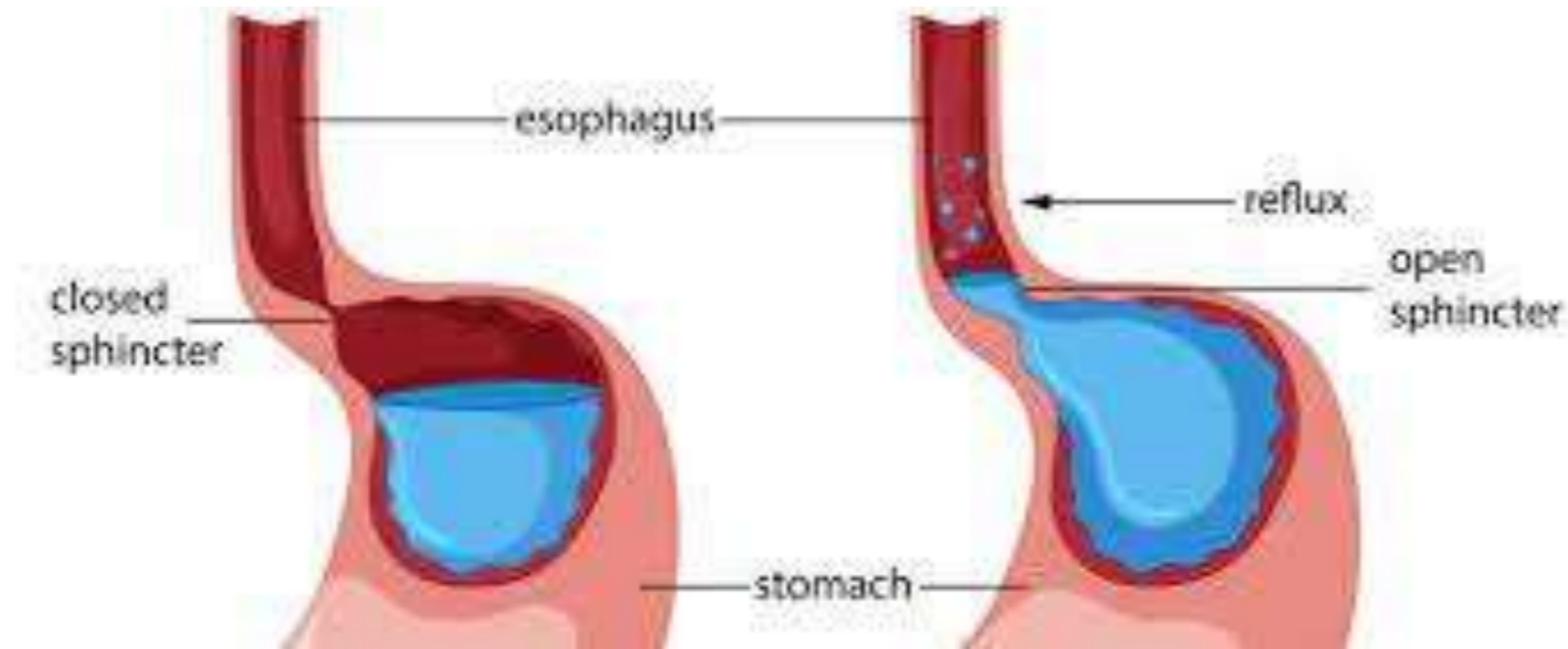
To evaluate a hiatus hernia, the patient is placed in Trendelenburg position on the fluoroscopy table. After administration of barium sulfate, the compression is applied on the abdomen and observes under fluoroscopy.



- **GASTROESOPHAGEAL REFLUX DISEASE**

After administration of 150 ml barium sulfate, the patient is placed in the supine position on the fluoroscopy table. After then turns the patient in right posterior oblique.

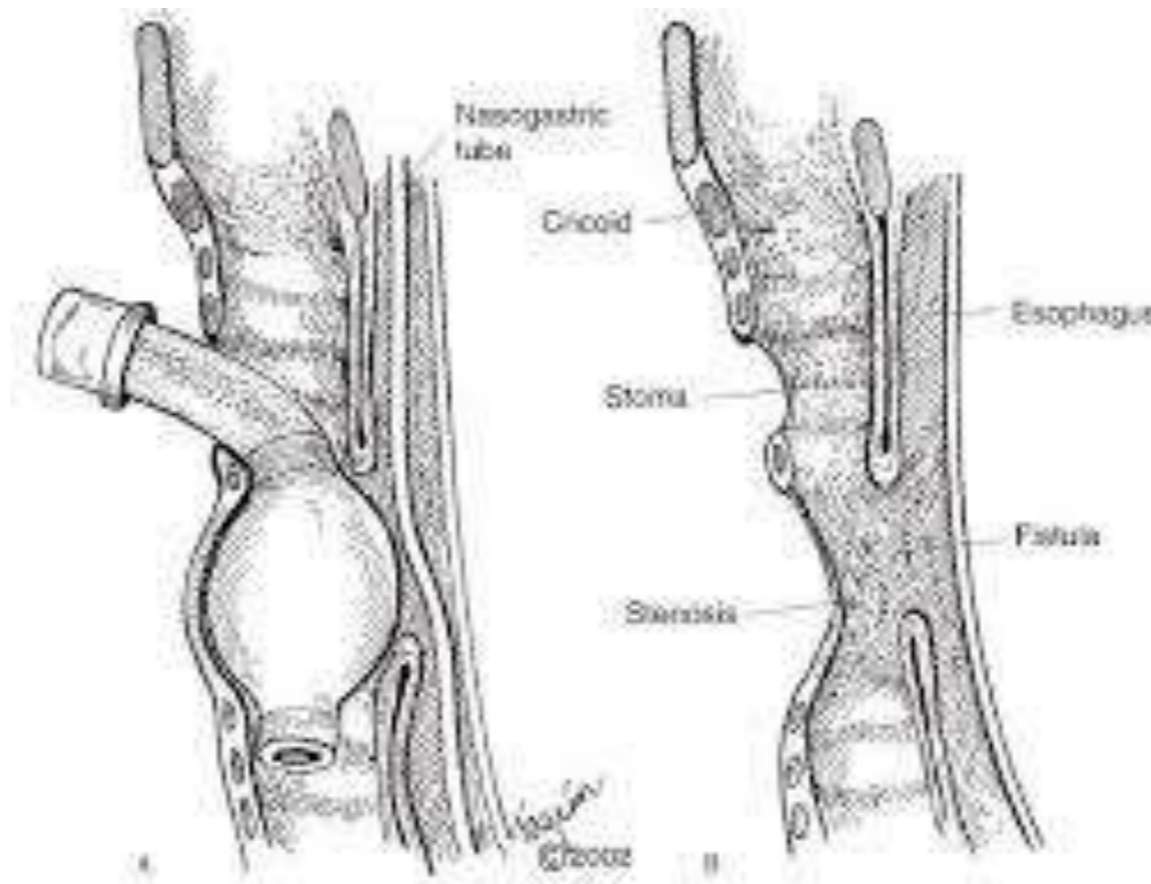
The radiologist observes the reflux under fluoroscopy, then several mouthfuls of water are given to the patient and turn into the prone position to promote reflux.



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TRACHEOESOPHAGEAL FISTULA/PERFORATION/OBSTRUCTION

If perforation, fistula or obstruction is suspected, then the gastrograffin (iodinated contrast media) is used for gastrointestinal study instead of barium sulfate due to the possibility of extravasations of barium into the bronchial tree that may cause the embolism.







THANK YOU