



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 ENEMA



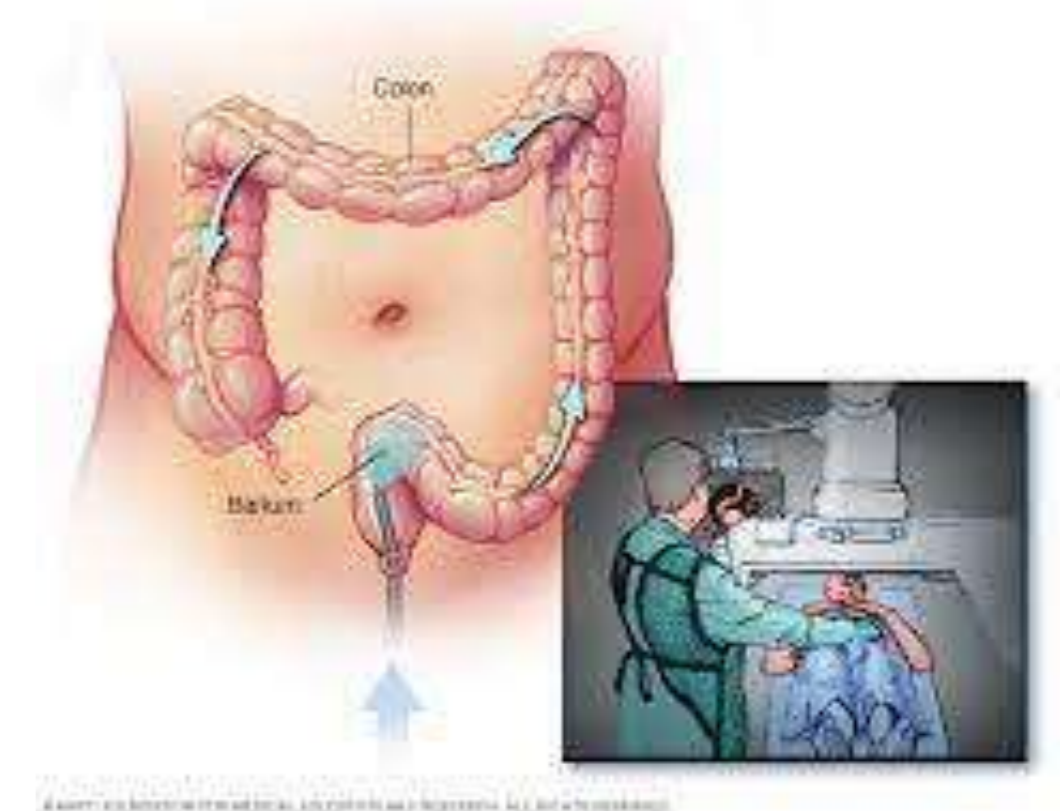
INTRODUCTION



It is a radiographic study of the large bowel, including the colon and the rectum. It is performed to diagnose structural and functional abnormalities of the large intestine by using the barium sulfate contrast media. The examination may be performed by two methods-

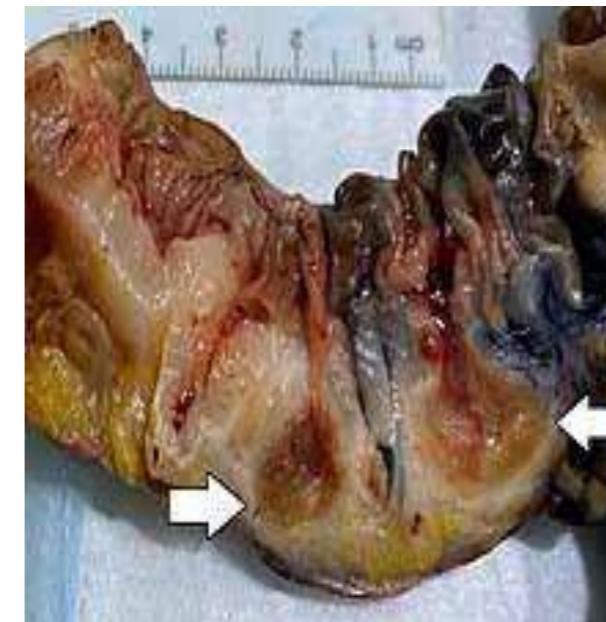
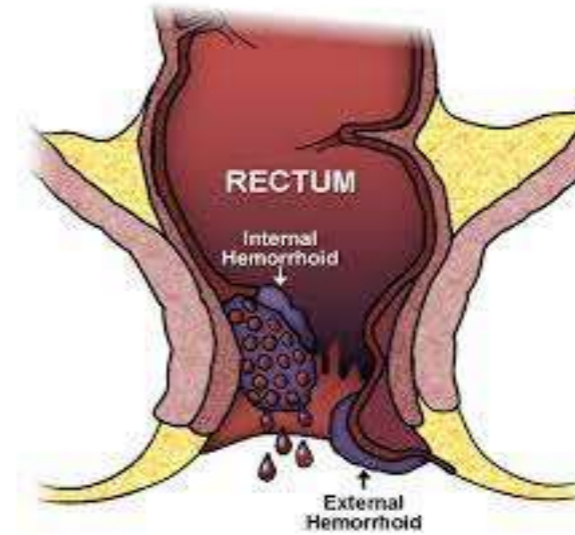
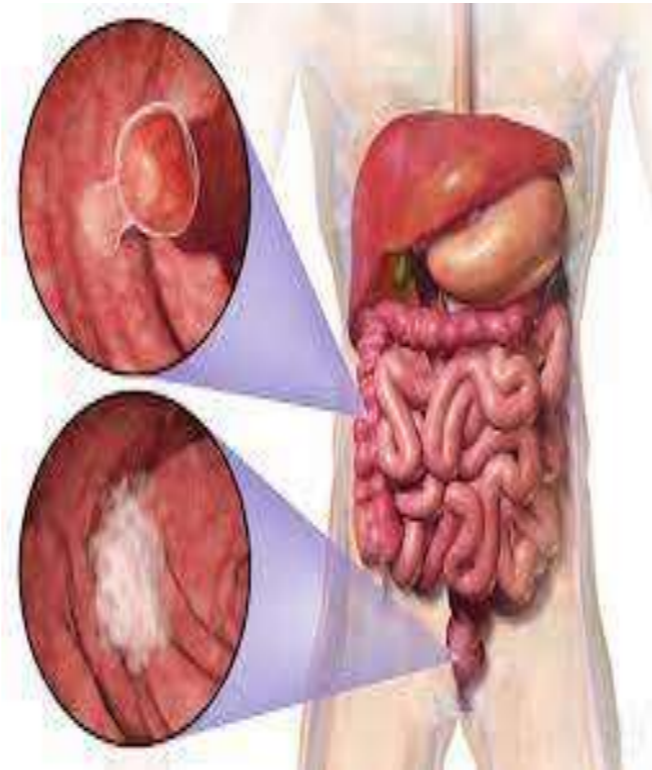
A. Single Contrast Study – Single Contrast study is performed for the evaluation of structural or functional abnormality.

B. Double – Contrast Study – Double – Contrast study is performed for the evaluation of the mucosal details.



INDICATION

- Suspected mass, polyps and lesions in the large intestine.
- Change in bowel habit.
- Abdominal pain.
- Chronic Diarrhea.
- Loss of weight.
- Bleeding from rectum.
- Partial obstruction.
- Diverticulosis.
- Melena (black, bloody stool).
- Large intestine Volvulus (twisted intestinal loop).

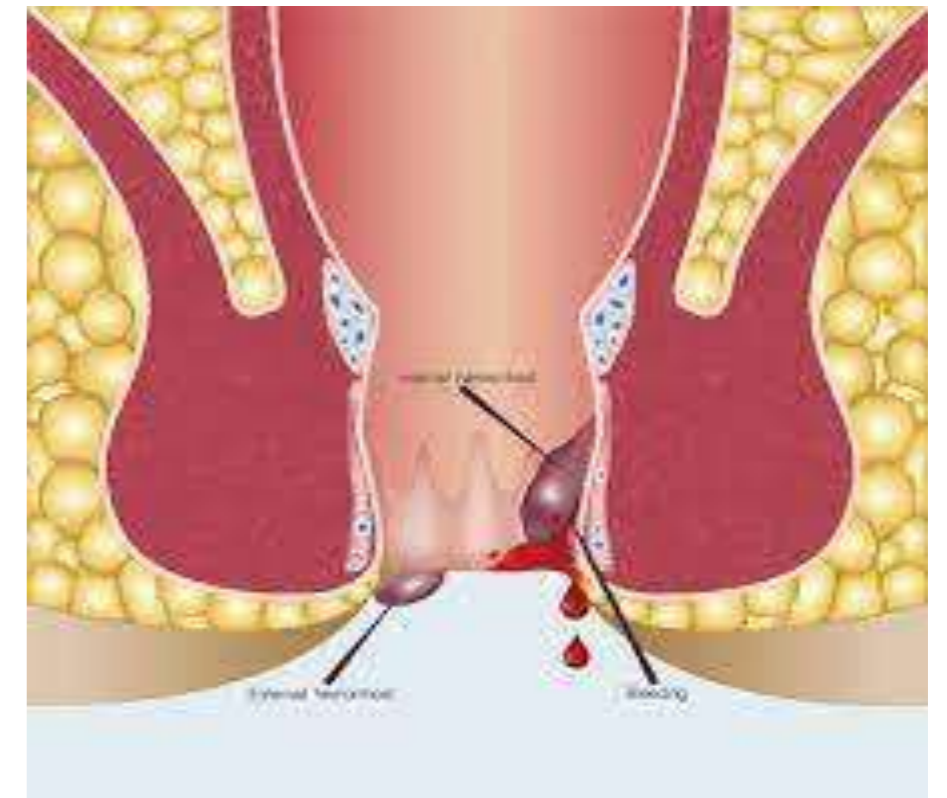
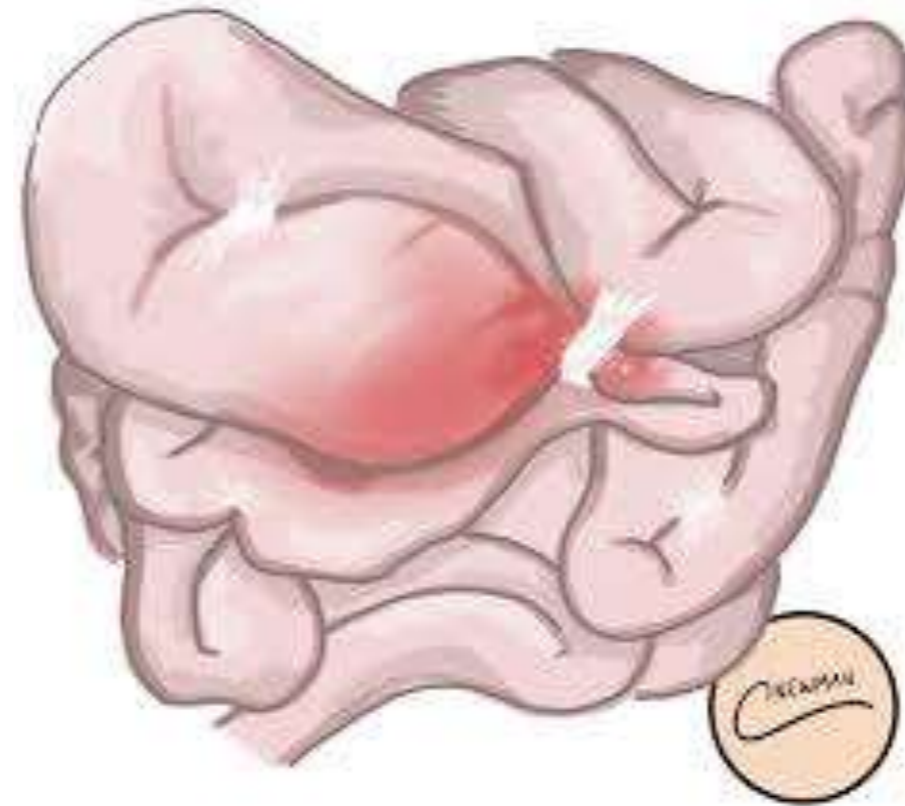




CONTRAINDICATION



- Bleeding Piles.
- Recent biopsy.
- Incomplete bowel preparation.
- Suspected fistula.
- Suspected perforation.
- Suspected pregnancy.
- Complete bowel obstruction.





PATIENT PREPARATION



- The patient is asked to take a low residue diet for two days prior to the examination and drink clear liquids the day before the examination.
- A laxative may be given to the patient, the night before the examination. A laxative is given for bowel preparation and cleansing prior to the examination because residue (feces) and gas can obscure the image.
- Fasting may be employed for 4-6 hours. Ask the patient not to eat or drink after midnight.
- Women should inform about any possibility of pregnancy. Pregnant women should not have a radiologic examination because of the risk of radiation exposure to the unborn baby.
- The patient is instructed not to smoke or eat chew gum because it prevents the proper coating of barium sulphate on the mucosa.
- The patient is instructed to remove all the metallic objects and metallic jewelry from the body.
- The radiologist must check the previous investigation reports.





EQUIPMENT



- Fluoroscopic unit with tilting table attached image intensifier or spot film device/high-speed cassettes.
- The high density of barium sulfate powder.
- Barium enema bag with wide tubing to allow the flow of dense barium.
- Lubricant jelly.
- Drip stand.
- Pneumatic bulb – to inflate the air.





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.
- The plain water enema must be applied to clear the residual fecal matter.
- **Contrast Media Preparation –**
For the preparation of contrast media, the high density of barium sulfate 300-400 gm powder should be mixed with 1 litre of water at room temperature, then continuously stir the suspension to make the uniform suspension.



Contd.,



SINGLE CONTRAST STUDY

- The patient is placed in supine position on the fluoroscopic table, and then a scout film of the abdomen is taken to see the bowel preparation. If the residual fecal matter is present in the bowel, the examination should be postponed for the next day.
- If the bowel preparation is good, then the patient is placed in a Sims position (similar to the Left lateral position)
- The enema bag is placed on the drip stand at 60cm above the table, after then clamp the tube and fill the bag with prepared barium suspension.
- Afterward, a well-lubricated enema tube tip is inserted gently into the rectum during expiration phase, and the tube is advanced 3-4 cm anteriorly.
- During the insertion of the tube, the radiologist checks the tube position under the fluoroscopy.
- After placement of the tube, the patient is turned in the supine position. Therefore by using gravity a mixture of barium and water is instilled into the colon under fluoroscopy guidance.



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- During the installation, whenever the barium fills the rectum, then the tube is clamped and spot film of the rectum and the sigmoid region is taken.
- After that, the patient is placed in a prone oblique position (right side down position). In this position, the barium fills the recto-sigmoid junction, and the spot film of this area is taken.
- Afterward, the patient is turned in the left side down position. In this position, the barium fills the splenic flexure and spot film of this area is taken.
- Whenever the barium fills the caecum, the tube should be clamped and the spot film of ileocaecal junction is taken.
- When the entire colon is coated with barium the full length of AP abdominal film is taken.



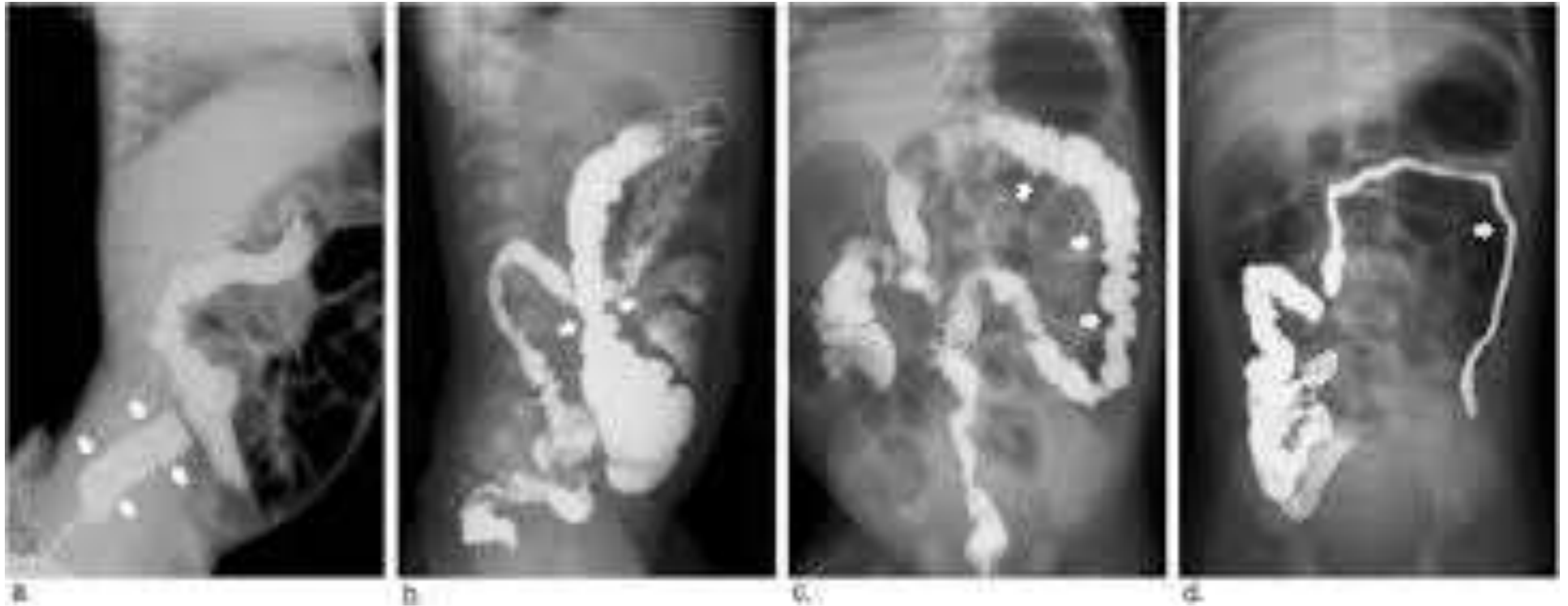
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DOUBLE - CONTRAST STUDY (Air Contrast Study)

- Immediately after the evacuation, the patient is placed in the left lateral position.
- A lubricated pneumatic bulb tip is then inserted gently into the rectum. Afterward, the air is introduced through a pneumatic bulb into the colon to distend the colon until the patient feels discomfort. The radiologist must evaluate the gas filling into the colon under the fluoroscopy.
- When the entire colon is filled with air, an AP projection of the abdomen is taken.
- After completion of the double contrast study, the pneumatic bulb tip should be removed.

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Contd.,





AFTERCARE



- 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 patient will be allowed to leave the examination room after completion of the examination.







THANK YOU