



Gastrointestinal Contrast Media

Overview

Barium Sulfate contrast media or aqueous contrast agents may be indicated in fluoroscopic or computed tomography (CT) applications. These agents can be given by mouth, feeding tube, or enema, as indicated for the appropriate study.

Target Audience

Radiology Nurses, Radiology Technologists, Radiologists, Radiology Administrators, Radiology Residents & Fellows, Medical Students

Nursing Considerations

In fluoroscopic studies, Barium Sulfate contrast media are used primarily to opacify the GI tract because they provide greater detail, are more resistant to dilution, and are less expensive than water-soluble iodinated contrast media. Water-soluble agents are absorbed rapidly from the interstitial spaces and peritoneal cavity, which is why they are used for examining patients with suspected perforation or hollow viscous. No ill effects from water-soluble iodinated contrast have been shown when injected in the mediastinum, pleural cavity or abdomen.

- A negative study for perforation of the bowel with water-soluble contrast may be repeated with barium sulfate contrast. Barium will more readily demonstrate small leaks that may remain undetectable with water-soluble contrast.
- For those in whom barium is not recommended, there are guidelines for the use of low-osmolality contrast media (LOCM) vs. high-osmolality contrast media (HOCM).
 - LOCM should be used for:
 - Oral administration in children at risk for aspiration.
 - Infants and young children with potential bowel perforation.
 - Evaluation of the small bowel in infants and young children.
 - HOCM should be used therapeutically for:
 - Uncomplicated cases of meconium ileus and meconium plug syndrome. Multiple iodinated contrast enemas are given in this setting.
 - 100-175 mgI/ml HOCM solution is recommended for well-hydrated infants.
 - Premature infants can be treated with isotonic nonionic contrast medium.
- Contraindications
 - Known prior or severe reaction to iodinated contrast media.
 - HOCM is contraindicated for (and LOCM are preferred for):
 - Patients at risk of aspiration.

- Patients with fluid/electrolyte imbalances, particularly the young and elderly with hypovolemia or dehydration.

In CT Studies, there is no significant difference in the diagnostic quality of CTs obtained using HOCM, LOCM, or barium agents, all of which are administered in low concentration.

- Water soluble agents are preferred over barium when GI perforation is suspected.
- Contrast is given before bowel surgery, or as a bowel marker for percutaneous CT guided procedures.
- Water-soluble contrasts for CT are very dilute and hypotonic.
 - Therefore, aspiration and hypovolemia are not contraindications to their use.
 - Idiosyncratic reactions are more likely to occur in patients with inflammatory bowel disease.

References

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