



Fluoroscopy Protocols

Upper GI with Barium Swallow-Combination UGIBS

Fluoro Time Target Limit: 4.0 minutes

Scheduling and Prep:

- *The patient should have nothing to eat or drink from midnight before their exam Until after their exam is completed.
- For afternoon appointments: The patient should have nothing to eat or drink for 8 hours prior to the exam time.
(Brushing teeth is allowed.) (No water, food, chewing gum, smoking, etc...) (Only medication that is necessary are allowed and with minimal water and as early in the morning as possible.)

Supplies: *Effervescent crystals *Chilled water for mixing with air crystals and for mixing the Thick barium *Thick barium *Single contrast thin Barium *1-medicine cup, 1-Straw, *2-drinking cups with mL measurement *Anatomical marker *13mm Barium Tablet
*13 MM barium tablet placed on Image Intensifier-Unless your Fluoro equipment Has built-in measuring capabilities

Air Contrast Esophagus Procedure:

- *Start with the patient in the upright position
 - *Slightly oblique the patient to the left. This will eliminate Superimposition of the esophagus and spine
 - *Have the patient hold the air contrast (thick) barium in their left hand so there will Be minimal delay between drinking the air crystals and beginning to drink the thick Barium.
 - *With the patient holding the medicine cup with water, in their right hand, Pour the effervescent crystals in to the water. Encourage the patient to drink the mixture Very quickly.
 - *The patient should refrain from belching throughout upper GI portion of this exam.
 - *Take the empty medicine cup and instruct the patient to begin drinking the thick barium.
 - *Have the patient take big swallows, quickly, one right after the other until the cup is Empty.
- **If aspiration of the barium occurs, stop the patient from drinking. Take note If the patient coughs or does not cough. Consult the radiologist if he or she Feels that the exam should continue or discontinued. If enough barium was ingested, before aspiration, some images can be taken.

***If told to discontinue giving barium, and enough barium was actually swallowed, Attempt to get the stomach images without giving any more to drink.**

Spot Images:

- *While the patient is drinking the thick barium; take an adequate number of images of The air contrast esophagus. **Anticipate (4-6) images.**
- *Concentrate on the distal esophagus at the EG junction. Once the distal esophagus has Been sufficiently imaged; move superior to the mid and proximal esophagus. Some of the Best-coated images will be seen after several swallows have passed down, so check again At the distal esophagus for better air contrast esophagus images.

Procedure for Imaging the Stomach:

- *Lower the patient to the prone position.
- *Have the patient roll onto their right side, and then supine, and then on to their Left side. (The purpose of this part is to allow the barium to thoroughly coat the stomach Lining.) If you see poor coating, have patient roll again.

Spot Images of the Stomach:

- *Take **three** images of the stomach in progressively less steep obliques.
- *One AP of the stomach.
- *One Right lateral stomach. (Be sure to roll the patient slightly forward to clear the Barium from fundus) *this will be the best time to demonstrate the fundus.
- **Image the air contrast **bulb** and air contrast **antrum** with filled C-loop.
This can often be accomplished in one image. **If bulb is not filling out yet, wait Until later in the exam.**

Procedure for imaging the single Contrast Esophagus:

- *Ensure that the anatomical marker is in place for these images.
- *Position the patient in the RAO position with their right arm by their side. Have their head on a doubled-up pillow. Have the patient hold the single contrast barium cup with a straw in their left hand.
- *Have the patient drink one normal swallow and just watch the tail of the Barium all the way down. This will show their motility without gravity Helping. Take note of any abnormal motility or pathology.
- *Next, have the patient drink three large swallows, fast and consecutively

Spot Images: *While the patient is drinking the three large, fast and consecutive swallows, Take images of the barium filled esophagus from superior esophagus to the inferior Esophagus, just enough to document the entire esophagus filled with barium to EG Junction. In an effort to reduce exposure, **anticipate 2-4 images.** After the third Swallow, have the patient inhale and bear down. (This is a good time to evaluate for hiatal hernias or **Schatzki's** rings as well as looking For motility issues.)

Spot Images:

*Image the **barium-filled bulb** and **barium-filled antrum** with single contrast filled C-loop. This can often be accomplished in one image.

If demonstrated earlier in the exam, do not repeat.

*Roll patient to their left side.

*Take images of the **air contrast filled duodenal bulb**, **air contrast filled antrum** with an Air contrast filled C-loop. This can often be accomplished in one image.

If demonstrated earlier in the exam, do not repeat.

*Have the patient then roll to the supine position and check for reflux.

****In order to minimize patient coughing or producing **aerosolization** (Airborne particles): DO NOT: illicit a forced cough when attempting to provoke reflux. Instead,**

Have the patient swallow their saliva and then tighten their stomach muscles For a few seconds. Then roll the patient enough RPO to place the barium up Against the EG Junction and repeat tightening of their stomach muscles.

* Screen capture or expose any reflux and label with Reflux and an up arrow.

*Take an AP of entire barium coated structures. (Stomach and C- loop of the small bowel.) This will Confirm or rule out malrotation

Patient is now allowed to belch

Bring patient to the upright position

Rapid Sequence Imaging: Esophagus / Barium Swallow

*In the upright, AP position, have the patient hold a large swallow of single contrast thin barium in their mouth. With their chin elevated, activate rapid sequence imaging, 4 per second, and instruct the patient to swallow. Take images just long enough to image the upper esophagus in motion. Stop imaging as soon as the one swallow clears the upper esophagus. Avoid unnecessary imaging.

*Repeat this process in the lateral position with the patient's shoulders depressed.

Barium Tablet:

- *Always wait until the end of the exam to administer the barium tablet.
- *In the upright position, have patient swallow a barium tablet with water.
- *Watch the tablet as it travels down the esophagus to the stomach
- *Screen save an image of the EG junction, for documentation that the pill went down.
- *Screen save the pill if it gets stuck in the esophagus. Note for the radiologist how long the tablet delays entering the stomach. If the tablet is not passing through the EG junction quickly, have the patient
Drink more water. Do not Fluoro the entire time.
- *If the pill is still lodged, have the patient drink one small swallow of the thin barium
And take an image of the pill surrounded by the barium.

If the pill **does** stick in the lower esophagus, for longer than about 5 minutes, the patient can safely be released with instructions to sip on water and refrain from eating for about 20 minutes to allow the pill to dissolve.

***If the pill remains lodged in the upper esophagus, the patient should remain at the ARA clinic sipping on water, until the pill passes on down the esophagus or if the pill is successfully coughed up.**

**The radiologist is relying on the Fluoro technologist to witness and inform them of reflux, barium tablet passage, pathology and motility issues.

** These are the minimum images needed to demonstrate the proper anatomy for this exam. When deemed necessary, more images may be taken to demonstrate pathology or for other reasons.

** Take care to minimize patient and technologist exposure.

**Instruct the patient to extra fluids for 2-3 days to help prevent constipation from the barium.

Reviewed-January 23, 2024