Fluoroscopy Protocols

Upper G.I. with Air Contrast with Small Bowel Follow Through

**FLUGISB**

Fluoro Time Target Limit: 5.0 minutes

**Due to possible long exam times- Reserve the case to the Radiologist that will be reading it, early in the exam. This will ensure that the TUNAT team does not get a critical issue while exam is still being performed after one**

**Scheduling and Prep:**

*The patient should have nothing to eat or drink from midnight before their exam until after their exam is completed. They should take 2 tablespoons of Milk of Magnesia at 9:00pm the night before their procedure. (Patient is allowed to brush their teeth) (No water, food, chewing gum, smoking, etc...)*

*These patients should only be scheduled in the morning due to the possible Extensive length of the exam.*

*Only medications that the patient deems absolutely necessary, can be taken with a very small amount of water and as early as possible.*

*No more than one SBFT to be scheduled at each Fluoro site per day.*

*Patient should be informed that this exam can take several hours.*

**Supplies:**

*Effervescent crystals *Chilled water for mixing with air crystal and for mixing the thick barium *Thick barium (HD-200, 764, or equivalent) *Thin barium (L-186 or equivalent) *1-medicine cup, *1-Straw, *2-drinking cups *Anatomical marker *If for dysphagia-13mm Barium Tablet *

*13mm tablet on Fluoro Image Intensifier if your machine does not have built-in measuring capabilities.*

**Overhead Image:** *AP KUB SCOUT OVERHEAD-Consult with the Radiologist if you see any unusual air / gas pattern or retained contrast from a previous study.

**Air Contrast Esophagus Procedure:**

*Position the Left anatomical side marker on the appropriate left side to be included on the esophageal images.*

**Take note of the time that the patient begins drinking the barium: This is the beginning of the timing for the small bowel portion.*

*Have 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 barium in their left hand so there will be
Minimal delay between drinking the air crystals and beginning to drink the thick Barium.
*With patient holding medicine cup with water, in their right hand, Pour effervescent crystals in to the water. Encourage the patient to drink the Mixture very quickly. Instruct them not to belch throughout the upper GI exam. *Take the empty fizzie cup and instruct the patient to begin drinking the barium with Big swallows, quickly, one right after the other until the cup is empty.

**Spot Images:**
*While the patient is drinking the thick barium; take an adequate number of Images to demonstrate 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 Esophageal images.

**Procedure for Imaging the Stomach:**
*Lower the table down placing the patient in the prone position. *Have the patient roll onto their right side, and then supine, and then on their left side. (The purpose of this part is to allow the barium to thoroughly coat the stomach lining with barium) If poor coating, have patient roll again.

**Spot Images of the Stomach:**
*Take 3 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) you can also tilt the table up about 20 degrees to unsuperimposed the fundus from the barium filled body and antrum. *This will be the best time to demonstrate the fundus.

**Procedure for imaging the single Contrast Esophagus:**
*Ensure that the anatomical marker is in place for these esophageal images. *Position the patient in the RAO position with their right arm by their side. Have Their head on a pillow. Have them hold the single contrast (thin) 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 3 large, fast, consecutive swallows.

**Spot Images:**
*While the patient is drinking the 3 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 and some image saves. 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.)

*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.

**There is no need to get deflated bulb and antrum images.

*Have the patient then roll to the supine position and check for reflux. Have the patient cough and strain. Then, have the patient roll enough in the RPO position to place the barium up against the EG junction And repeat coughing and straining.  
*Screen save images of reflux if it occurs, 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

**If the patient is having dysphagia, have them swallow a Barium tablet at the end of the Upper GI. Document the Passage of the tablet or that the pill has gotten stuck and For how long.  
New: At this point, you may want to do the spot images of the upper loops of small bowel to prevent missing these later in the exam.
Proceed to the Small Bowel Exam; The patient may belch the air out now.

**Procedure for Small Bowel Follow Through:**
*Give patient another 16-20oz of chilled thin barium
*The remainder of the small bowel images are to be done prone-unless patient is unable to comply, then perform AP.
*Images are taken at timed intervals until the barium has reached the cecum.
*There should not be an immediate labelled image since the Upper GI was performed first.
*The first Small Bowel Image should be labelled with the amount of time that has past from the start of the patient drinking the barium.
*The next image should be taken 15 to 20 minutes from the lst image with the amount of time that has passed from the patient beginning to drink the barium,
*Send images in order.

**Overhead Images:**
*PA KUB labeled with the amount of time that has passed since patient began drinking for the UGIA.
*PA KUB every 20 minutes up to 1 hour
*After 1 hour, take PA KUB images every 30 minutes until Barium reaches cecum

**EXAMPLE:** KUB SCOUT

UGIA 9:00am

#1 9:20am - 20 minute image

#2 9:40am - 40 minute image
#3 10:00am-1 hour image
#4 10:30am- 1-1/2 hour image
ECT…

** (There should never be an immediate overhead image when these exams are combined since time will have passed during the UGIA)

**SPOT IMAGES:**

*When barium sufficiently fills the cecum, obtain spot images Of the filled loops of small bowel and unsuperimposed Terminal ileum.
*Using your trained judgment, the patient may need to drink Additional barium to ensure even distribution, at some point during their exam. This will ensure upper bowel loops are still filled with barium and can be visualized during the Spotting portion of the exam.
*With compression paddle, take 2-3 magnified images of the Terminal ileum unsuperimposed by other loops of the small Bowel
*Take approximately one image per quarter of the whole small Bowel while compressing.

*** Take note of any dysmotility, polyps, dilatation, strictures, or any other abnormalities.
*Open to largest field of view and take an AP of entire filled Loops of bowel.
*The transit time from the beginning of drinking to the time that the barium reaches the cecum should be communicated to the radiologist.

**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/she feels that the exam should continue or be discontinued.

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

**Care should be taken to minimize patient and technologist exposure.

**Following the procedure, the patient should be instructed to drink extra fluids for 2-3 days, to help prevent constipation from the barium.

Reviewed and Revised April 5, 2019