Videofluoroscopic Swallow (Modified or Rehab Barium Swallow) Protocol

IMG1234 FLUORO GI REHAB BARIUM SWALLOW W/LTD ESOPHAGRAM

Definition:

Evaluation of the oral and pharyngeal phases of swallowing. The purpose of this study is to assess swallow physiology, impact of rehabilitative strategies, and guide appropriate treatment planning. While aspiration can be identified on this examination, presence or absence of aspiration is not the sole purpose of the study. Although used primarily for evaluation of function, structural abnormalities may also be revealed and may be a primary cause of swallowing dysfunction.

Contrast Media:

Barium suspension, Barium tablet, Omnipaque 240 or 350 (Iohexol), effervescent carbon dioxide agent, as indicated.

Indications:

Oropharyngeal dysphagia, coughing, choking or drooling with swallowing, known or suspected aspiration pneumonia, neurologic disorders likely to affect swallowing, myoneural junction disorders likely to affect swallowing, myopathy involving the pharynx and cervical esophagus, masses of the tongue, pharynx, larynx or retropharyngeal region, follow-up post-treatment evaluation of the mouth, pharynx, larynx, or retropharyngeal area, follow-up of known oropharyngeal swallowing dysfunction, follow-up assessment of dietary restrictions and protective maneuvers to limit or prevent aspiration, follow-up assessment of patients recovering from trauma or coma, oral feeding assessment for ventilator dependent patients.

Contradictions and Cautions:

Pregnancy.

Prep:

Peds: NPO minimum of 2 hours.

Adults: None.

Prelim:

Radiologist will obtain digital neck scout, collimated to area of interest, excluding the eyes.
Supplies:
Contrast: Barium or Water Soluble Contrast (Omnipaque/Iohexol) as indicated
Barium tablet
Drinking straw and paper cup
Graham crackers
Spoons
Small medicine cups

Equipment Set-up:

| Shands North Tower | Remove the grid for patients under 55 pounds
|                   | **Infant:** "Fluoro Pediatric Barium or Iodine Singleshot"
|                   | center cell, no grid
|                   | **Child:** "Fluoro Pediatric Barium or Iodine Singleshot"
|                   | center cell, grid if >55#
|                   | **Adult:** "Fluoro Barium or Iodine Singleshot"
|                   | dominant (round) cell, with grid
|                   | **Bariatric:** "Fluoro Barium or Iodine Singleshot"
|                   | dominant (round) cell, with grid
|                   | **All:** 30 P/S

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Procedure:

**Contrast use:** Barium is the contrast of choice; however, if a surgical leak is suspected the SLP will start the study with Omnipaque. Barium contrast may include thin liquid, nectar thick, honey thick, and pudding. Additionally, barium may be placed on graham crackers or mixed with other foods to test a variety of consistencies. A 13mm barium tablet may also be used to assess for stricture or other impairment that may pose a problem for oral medications. Different volume amounts and modes of delivery (spoon, cup, straw, and bottle) may be used as it is important for the SLP to challenge the swallow system to assess physiological components in a variety of situations (Hazelwood, Armeson, Hill, Bonilha, Martin-Harris, 2017).
**Rehabilitative strategies:** Oropharyngeal swallowing can be altered through various behavioral changes. During the study the SLP may assess the impact of postural adjustments, bolus volume and viscosity, use of swallow maneuvers, and even when appropriate, use of imaging as real time biofeedback. The goal of these strategies is to assess which changes improve swallow function for improved airway protection and swallow efficiency.

**Imaging Components:**

**Study length:** The SLP is mindful of UF Radiology’s goal to keep studies under a fluoro time of five minutes, however there may be special circumstances that requires studies to run over that time mark. The study should not be terminated solely due to reaching the five minute mark if additional images are of clinical value. However all parties will be conscious of medical need and risk/benefit of continuing the fluoro time.

**Image:** The standard of care for these studies is 30 frames per second (Bonilha, Blair, Carnes, Huda, Humphries, McGrattan, Michel, Martin-Harris, 2013). Lateral view is primarily used and should include the region from lips to trachea and including the oronasal cavity (being mindful that the eyes should not be included in the field). The SLP and radiologist will work together to achieve the optimal view. Additionally, oblique and AP views may be used to obtain additional information regarding symmetry and for esophageal sweep when indicated. The esophageal sweep improves the ability to differentially diagnose oropharyngeal dysphagia from esophageal dysphagia and improves patient health outcomes (Watts, Gaziano, Jacobs, Richter, 2019).

**Adverse reactions:** For many individuals, aspiration is an expected outcome of performing this examination. The SLP implements steps to reduce adverse reaction of aspiration during the study. This may include use of suction, SLP cueing for the patient to generate a volitional cough to clear aspiration, and implementing rehabilitative strategies. The study should not be terminated due to presence of aspiration; however, all parties should be mindful of the risks when repetitive excessive aspiration is present.

1. Introduce yourself to the speech pathologist as the radiology resident on service. As you know, we work collaboratively with the speech pathologist and each serves a unique function during these examinations.
2. Discuss what the expected imaging findings are.
3. Discuss the speech pathologist expectations of the study and whether or not a limited esophagram will be performed.
4. Introduce yourself to the patient as the radiologist who will be assisting the Speech Pathologist for this exam.
5. Line up the patient’s head/neck under fluoroscopy; remember to collimate to the region of interest. Make sure the patient’s eyes are NOT included in your field.
6. Observe the Speech Pathologist giving the patient a variety of consistencies. As the radiologist, it is your job to note any instances of aspiration or penetration on the exam and what consistency of barium they occurred with.
7. Observe the patient for any other pathologies, such as premature slippage, delayed swallow etc.
8. If there are any unexpected findings not related to a swallow study that you feel would warrant more imaging, please save shots and discuss them with your attending at the time of interpretation.
9. The Speech Pathologist may ask you to perform a **Limited Esophagram**. This means we will observe the esophagus in ONLY ONE VIEW. If there is pathology – please take an image to document. We will then suggest to the clinicians to perform a full diagnostic esophagram.
10. Discuss the case with the Speech Pathologist upon completion and note any findings that he/she may add to your interpretation.
11. It is not necessary to review the images with your attending prior to sending the patient. However, take down any notes that you feel are necessary for discussion with your attending at the time of interpretation.

**Patient Care/Follow Up:**

Speech Therapist will provide appropriate instructions.

**References:**

