

**Course Title: CONVENTIONAL RADIOLOGICAL PROCEDURE & CLINICAL PRACTICE**

**MID TERM ASSIGNMENT**

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**Q1: Explain the different positions used to take films for barium meal?**

**Positions Used To Take Film for Barium Meal**

1. **Image for stomach:**

For stomach image, the patient should be laid on the following positions.

1. RAO (Right Anterior Oblique): To show the Antrum and Greater Curve.
2. Supine: To demonstrate the Antrum and Body.
3. LAO (Left Anterior Oblique): To show the lesser curve.
4. Left Lateral Tiled: head up to 45 degree, in this condition the gas comes in the fundus part, which demonstrate the Fundus part.
5. **Image for Duodenal Loop:**

For the demonstration of duodenum loop, the patient should be laid on the prone condition.

1. **Image for Duodenal Cap:**

For Duodenum Cap the patient should be laid on the following conditions:

1. Prone
2. RAO (Right Anterior Oblique)
3. Supine
4. LAO (Left Anterior Oblique)

**Q2: A patient came with complaint of difficulty in swallowing; which imaging** **procedure is best for its diagnosis and what are the standard protocols for this procedure?**

**Dysphagia (Difficulty in swallowing)**

Diagnosis of Dysphagia be determine by the types of swallowing problem, we use a variety of tests to see the cause of swallowing problem. The following tests may include:

1. **X-ray with contrast Material:**

This is Barium X-ray.

1. Taking Barium Solution which shows changes in esophagus.
2. Taking Swallow Solid Food or a pill coated with Barium, shows any blockages in esophagus.
3. **Dynamic Swallowing Study (Barium-coated Food):**

This test shows the image of food going through the Throat, and determine the problems in mouth and throat muscle.

1. **Endoscopy:**

An endoscopy is passed into the throat to see the esophagus clearly, and determine the inflammation, narrowing or tumor.

1. **FEES (Fiber-optic Endoscopic Evaluation of Swallowing):**

In this test the throat is showing through camera and Endoscope.

1. **Manometry:**

This small tube is connected to the pressure recorder, which measure the contraction of muscles of esophagus.

1. **Imaging Scans:**

In this procedure we are doing CT-scan to show image of Bones and soft tissues, and MRI-Scan for image of organ and tissue.

**Q3: Write the general classification of contrast agents used in conventional radiological procedures also explain each classification.**

**CONTRAST AGENTS:**

A compound used to increase the visibility of the internal body structure in an image.

**Classification of Contrast Media:**



1. **Positive Contrast Media:**
* Having high atomic number elements.
* Contrast material is more radiopaque to X-ray.
* White appearance on the film.
* E.g. Barium and iodine: Barium and iodine compounds can be injected into blood vessels.
1. **Barium Based: (BaSO4)**
* Used for the examination of GI tract.
1. **Iodine Based:**
* Used for:
1. Angiography: For the visualization of blood vessels.
2. Intravenous and Retrograde Urography: For the detail image of Ureters and Kidney.
3. Hysterosalpingography: For the examination of shape and potency of Uterus and Fallopian Tube.
4. Sialography: For the Examination of Salivary Tract.
5. Myelography: For the examination of Spinal Cord.
6. Cholangiography: For the examination of Bile Ducts.
7. **Negative Contrast Media:**
* They are Radiolucent.
* Having low atomic number.
* Black or Dark appearance on film.
* X-ray penetrate easily.
* E.g. Air, Water and Carbon-dioxide (CO2)
1. **High Osmolality Contrast Media (HOCM):**
* Having seven times the osmolality of plasma.
* Most of them are ionic.
1. **Low Osmolality Contrast Media (LOCM):**
* Having two times the osmolality of blood.
* Less Nephrotoxic.
* Non-separating.
* They may be ionic and non-ionic.
1. **Isosmolar Contrast Media:**
* Having same osmolality as plasma and blood.
* They are Non-ionic.