Esophageal High Resolution Impedance Manometry: The GI Nurse Role.

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Esophageal High Resolution Impedance Manometry (HRIM) is a diagnostic test that uses small transducers that are integrated into a thin catheter to measure lower esophageal sphincter (LES) length, resting pressure, and the ability to relax with swallowing. The contractile strength and coordination of the esophageal body is also measured. A high resolution probe is used to monitor how effective the esophagus can clear swallowed liquids.

**STUDY INDICATIONS**
The common indications for this study are dysphagia, GERD, and non-cardiac chest pain.

**ABNORMAL ESOPHAGEAL MOTILITY DIAGNOSED BY HRIM**

**Achalasia**
- Medical management is used to relax smooth muscle i.e. calcium channel blockers and nitroglycerin.
- Endoscopic treatments include injection of Botox into LES, this relaxes the muscle. Endoscopic balloon dilation with a specially designed balloon that is used to rupture the LES.
- Surgical treatment -Laparoscopic Heller Myotomy involves precise cutting of the LES to allow it to permanently open, accompanied by a Fundoplication.

**Distal Esophageal Spasm (DES)**
- Avoiding trigger foods often relieves symptoms.
- Medical management is used to control underlying conditions i.e. heartburn, GERD, anxiety, or depression.
- Endoscopic injection of Botox is used to relax the swallowing muscles.

**EMS Probe**
Achalasia is an abnormality in which the esophagus has absent peristalsis and the muscular valve (LES) does not fully relax, which makes it difficult for food and liquid to pass into the stomach.

**Distal Esophageal Spasm** (DES) is marked by simultaneous contractions of the esophagus during swallowing which is associated with dysphagia and/or non-cardiac chest pain. When the contractions become excessive in amplitude or duration, it is known as Nutcracker Esophagus.

**OVERVIEW**

**PROCEDURE**
- Explain procedure process to the patient. Make sure the patient has been NPO for 8 hours and aware no sedation will be given. Assure no clothing is restricting the abdomen.
- While the patient is in the sitting position gently insert the probe into patient’s nares, down back of throat into esophagus until probe tip reaches the stomach. A topical anesthetic may be instilled into the nose to make passage of the probe more comfortable. The patient may take sips of water to assist with probe placement.
- Study is performed with the patient recumbent on left side.
- Various measurements are taken while the patient is given 5ml of NSS for ten swallows, followed by 5ml of a viscous challenge medium for ten swallows.
- When the swallows are completed the probe is removed.
- The Nurse performs, edits the study and creates a report. The Gastroenterologist interprets the study and provides results to the patient.
- The Nurse plays an integral role in obtaining a complete and accurate study by helping the patient through the test and placement of the probe which causes anxiety.

**References:**