



# Endoscopic Variceal Ligation (EVL)/Banding

## General Information

### Objectives

#### **I. Discuss the background of esophageal varices**

- A. Related cause
- B. Statistics of bleed/re-bleed

#### **II. Describe esophageal banding (variceal ligation)**

- A. History
- B. Indications
- C. Contraindications
- D. Complications

#### **III. Explain the procedure**

- A. Preparation of equipment/supplies
- B. Anticipation of process of procedure
- C. The procedure
- D. Post-procedure care

## **I. Background of esophageal varices**

- A. Chronic liver disease often leads to fibrosis and cirrhosis. Cirrhosis is the most common cause of portal hypertension which leads to dilation of collateral vessels which includes the esophageal development of varices.
  
- B. About one third of patients with cirrhosis and esophageal varices will have a significant bleed at some point. The mortality rate for a first time variceal bleed is 30-50%. A second bleed is likely to occur in about 60-70% of the survivors within the first year. One study stated the frequency of a re-bleed could be as high as 40% in the first 6 weeks. Mortality rate is 20% with each re-bleed.

## **II. Esophageal banding (variceal ligation)**

- A. *History:* Endoscopic variceal banding (ligation) was first done on human in 1989. It came about from band ligation of hemorrhoids. It is the choice treatment for acute esophageal variceal hemorrhage. It has been shown to significantly lower rates for re-bleeding, mortality, and complications that might occur with other treatment options.
  
- B. *Indications:* Endoscopic variceal banding is used for hemostasis of acute or recently bleeding esophageal varices; it is also intended to be performed for obliteration of the varices to prevent future bleeds.
  
- C. *Contraindications:* Esophageal banding should not be performed on patients with esophageal strictures, esophageal diverticula, or suspected esophageal perforation.

The procedure should not be done on patients who are sensitive to or allergic to latex until verifying your bands are latex free. Changes in EKG or respiratory instability are also reasons not to do the procedure. If a patient is uncooperative the procedure should not be done.

- D. *Complications:* Aspiration, perforation, esophageal obstruction due to bleeding and edema, chest pain, dysphagia, and infection may occur.

### **III. Procedure**

1. Prepare equipment/supplies.
2. Check all equipment to ensure it is working properly.
3. Assemble supplies: Use the scope of the physician's choice (i.e. regular upper scope or single channel therapeutic).
4. Prepare endoscopic banding ligation kit.
5. Ensure other supplies are available as for an EGD.
6. Ensure emergency supplies for bleeding are available (to include lavage supplies, tamponade balloons, sclerotherapy supplies, and suction equipment).
7. Always have airway supplies immediately available: oral suction, oral and nasal airways, ventilation bag, and intubation equipment.
8. Some physicians may use one scope to do the EGD and evaluate the varices.
9. While physician is doing the EGD, a second scope may be prepared with the bander; this would decrease procedure time and increase chances for fewer complications.
10. Don't forget Personal Protective Equipment (PPE).

#### **Pointers for the RN**

1. Preparation for procedure also includes verifying consent, NPO status, and if antibiotics were ordered that they have been given. If blood has been typed and cross-matched, make sure it is available and ready.
2. Explain procedure process to patient in easy to understand terms.

#### **Pointers for the RN and Associate**

1. Anticipation of procedure begins with having all supplies immediately available that might be needed, the emergency drugs and airway equipment, tamponade supplies, etc.
2. If it's been awhile since you assisted with a banding procedure, review your Policy and Procedure manual, the SGNA Procedure Manual, and/or the "cheat sheet" for using your bander system. (Most companies give you a quick look sheet that can be put in your room or with the banders that shows the complete set up and use.)
3. Before the procedure ask the physician what they will need to make sure all the supplies/equipment are readily available and if the bander should pre-loaded on a second scope.
4. When putting the bander on the scope, make sure the trigger handle is firmly secured and turned in the correct position.
5. When tightening the string/wire of the ligating unit after attaching the bands to the end of the scope, check that the strings do not obstruct the view of the scope; this keeps the line of view open.
6. Always familiarize yourself with the type of banding system and follow manufactures instructions.

### **Pointers for the RN and Associate - the Procedure**

The varix that is the largest or one with stigmata (red spots) should be banded first. Banding should start at the most distal part of the varix but above the Z-line.

1. Irrigation is able to be performed during the procedure using the irrigation attachment of the banding kit and a large syringe.
2. Count the number of bands actually attached; note this on your record.

### **Pointers for the RN and Associate - Post Procedure**

1. It is important to verify the number of varices banded and properly document it.
2. Patient will need to return for additional banding procedures; most patients will require up to 4 banding sessions at 2-4 week intervals to obliterate the varices.
3. If re-bleeds occur patient may be considered for other methods of control of bleeding: TIPS, therapeutic radiological procedure, or liver transplant.

### **Pointers for the RN**

1. Patients are monitored post-procedure for chest pain, fever, shortness of breath, bleeding, and subcutaneous emphysema (signs of perforation).
2. Monitor vital signs; elevate the head of the head to reduce aspiration risks.