2. Nasogastric (NG) suction
3. Endoscopic sclerotherapy (injection of the bleeding vessel(s) with a sclerosing agent via a catheter that is passed through the endoscope)
4. Endoscopic band ligation (small elastic band is placed around the bleeding varix resulting in hemostasis)
5. Balloon tamponade (Sengstaken–Blakemore tube)
6. TIPS (transjugular intrahepatic portocaval shunt) (see chapter on transplants)
7. Intraoperative placement of a portocaval shunt
8. Liver transplant

**ESOPHAGEAL PERFORATION OR RUPTURE**

**DEFINITION**
Iatrogenic or pathologic trauma to the esophagus, which may result in leakage of air and esophageal contents into the mediastinum. Carries a 50% mortality.

**ETIOLOGY**

**Iatrogenic:** Often occurs in an already diseased esophagus. Comprises 50–75% of cases of esophageal rupture.
- Endoscopy
- Dilatation
- Blakemore tubes
- Intubation of the esophagus
- NG tube placement

**Boerhaave syndrome:** A full-thickness tear. Generally occurs in the relatively weak left posterolateral wall of distal esophagus. Due to:
- Forceful vomiting
- Cough
- Labor
- Lifting
- Trauma

**Mallory–Weiss syndrome:** A partial-thickness tear. Usually occurs in the right posterolateral wall of the distal esophagus and results in bleeding that generally resolves spontaneously. Due to forceful vomiting.

**Foreign body ingestion:** Objects usually lodge near anatomic narrowings:
- Above the upper esophageal sphincter
- Near the aortic arch
- Above LES

**SIGNS AND SYMPTOMS**

- Severe, constant pain in chest, abdomen, and back
- Dysphagia
- Dyspnea
- Subcutaneous emphysema
- Mediastinal emphysema heard as a “crunching” sound with heartbeat (Hammon’s crunch)

*The most serious complication of balloon tamponade for esophageal varices is esophageal perforation.*

*Typical scenario:* An alcoholic man presents after severe retching, complaining of retrosternal and upper abdominal pain. **Think:** Boerhaave syndrome (full thickness) or Mallory–Weiss syndrome (partial thickness).

*Subcutaneous and mediastinal emphysema require a full-thickness tear.*

*Differential diagnosis of esophageal rupture includes aortic dissection, MI, spontaneous pneumothorax, pancreatitis, and perforated peptic ulcer.*