



**Figure 24.1**  
Sengstaken–Blakemore tube.

compression from the esophageal tube, and aspiration. Most cases of UGIB can be controlled with endoscopy or medications, but tamponade remains an effective modality for extreme cases.

### **Surgery**

This is the final option for a severe UGIB. Cases where bleeding does not stop or significantly decrease after medication use, endoscopy, or tamponade need surgical intervention. Most UGIB stops after conservative treatment. However, ongoing blood loss, massive blood loss (5 units of red blood cells transfused in 6 hours or 2 units of blood necessary every 4 hours) should prompt surgical intervention. If a patient requires 2 units of blood after crystalloid infusion to maintain blood pressure, surgical consultation should be considered. A surgical team should evaluate patients with other morbidities early in a case of severe UGIB. EGD should be performed in these extreme cases, but usually in the operating room (OR) under general anesthesia to guide surgical treatment or possibly provide direct sclerotherapy.

Due to the risk of aortoenteric fistula, patients with a history of aortic graft placement and current

UGIB should be evaluated emergently by a vascular surgeon.

## **Lower gastrointestinal bleeding**

### **Colonoscopy**

Colonoscopy provides direct visualization of bleeding sources and the opportunity for direct therapeutic intervention. Direct epinephrine injection or electrical coagulation can stop bleeding sources. This is considered the intervention of choice for cases of LGIB. Colonoscopy is difficult on an emergent basis because it is best done after adequate bowel preparation. It is not usually done in the ED. If urgent colonoscopy is anticipated, an emergent bowel preparation can be performed with NG administration of 2L of polyethylene glycol. This can cause volume loss by osmotic diuresis, so hemodynamic status should be followed closely, usually in the ICU setting.

### **Sigmoidoscopy**

Sigmoidoscopy is performed on an outpatient basis to evaluate the sigmoid colon for diverticulae, polyps or tumors. It is reserved for cases of mild LGIB.

### **Arteriography**

Arteriography can detect 0.5 ml of GIB per minute. Since the advent of endoscopy, it is only used in 1% of UGIB cases. Arteriography is more commonly used in LGIB cases. It can identify the site of bleeding, but rarely diagnoses the cause. If bleeding is detected, vasopressin or epinephrine can be injected locally or embolization can be performed to stop the bleeding. There is a 2% complication rate including dye reaction, arterial dissection, or ischemia related to vasopressin. The use of angiography in the setting of GIB depends on individual institutional practice, availability, and operator expertise. It is usually reserved for significant, persistent, or intermittent LGIB that cannot be localized by endoscopy. It usually is performed outside of the ED setting, after admission to the hospital.

### **Tagged red blood cell imaging**

Technetium ( $^{99m}\text{Tc}$ ) tagged red blood cells can detect LGIB of 0.1 ml/min. An initial scan is done and delayed scans are compared in an attempt to localize bleeding. This scanning is rarely done in