



**FIGURE 33-2** Approach to the patient with acute gastrointestinal bleeding. EGD, Esophagogastroduodenoscopy. \*If severe bleeding prevents endoscopic visualization, arteriography may be performed.

the ulcer crater (Forrest 2). The patient with a “clean base” ulcer exhibiting no such stigmata has an excellent prognosis for cessation of bleeding. Patients found to have high-risk stigmata are likely (~50%) to have continued or recurrent bleeding. In such patients, the site of bleeding may be treated by injection therapy with vasoconstrictors or saline, thermal therapy by electrocautery, or mechanical therapy by placement of endoscopic clips. These endoscopic therapies decrease rates of rebleeding, mortality, need for transfusion, need for surgery, and length of hospital stay. Thermal or mechanical therapy, applied alone or in combination with injection therapy, is more effective than injection therapy alone. Recently developed alternatives, such as hemostatic sprays and cyanoacrylate compounds, offer additional modalities that can be used in such cases.

An overall approach to the patient with acute GI bleeding is outlined in Figure 33-2. Historical points and objective findings often enable localization of the bleeding site to the upper GI tract (proximal to the ligament of Treitz) or to the lower GI tract (distal to that point). For the patient with melena or hematemesis, the upper GI tract should be examined first. Patients with hematochezia more commonly have lower GI bleeding, but when the pace of bleeding is brisk, an upper GI tract lesion may manifest with hematochezia. Placement of a nasogastric tube with aspiration of contents is a reasonable first step. The absence of blood does not by itself rule out the presence of an upper GI source because blood from a duodenal bulb ulcer may not flow back into the stomach to allow sampling by the nasogastric tube. In general, in patients with acute GI hemorrhage who have

significant blood loss, an upper endoscopy should be the initial step in the evaluation.

Once the lower GI tract has been identified as the source of bleeding, sigmoidoscopy or colonoscopy is the test of choice. In cases of lower GI bleeding in which the pace of bleeding is so brisk as to preclude endoscopic visualization of the colon and rectum, scintigraphic erythrocyte scans using technetium-99m ( $^{99m}\text{Tc}$ )-labeled sulfur colloid or pertechnetate can localize the bleeding site if the rate of blood loss exceeds 0.5 mL/minute. Although the bleeding site identified by scintigraphic examination may not be accurate, it will direct the visceral arteriographic search while minimizing the amount of dye used. The recent description of capsule endoscopy followed by directed push or balloon enteroscopy has provided a possible endoscopic means of delineating and controlling bleeding lesions in the small bowel. There is *no* role for barium studies in the evaluation of acute GI hemorrhage.

### CHRONIC GASTROINTESTINAL HEMORRHAGE

Chronic GI bleeding is a diagnostic challenge. It can manifest as self-limited, recurrent episodes of melena or hematochezia, but usually without the degree of hemodynamic compromise discussed earlier. Some patients have no overt evidence of blood loss but rather have persistent anemia and persistent occult blood loss. The evaluation of this condition differs from that of acute GI hemorrhage; the pace of the evaluation is less urgent, and the likely causes of bleeding differ from those associated with acute GI bleeding.