

Gastric Ulceration/Erosion

Michael Willard, DVM, MS, Diplomate ACVIM, Texas A&M University

The most dramatic reason for which patients with gastric ulceration/erosion (GUE) are referred is life-threatening upper GI bleeding. A second less dramatic but important reason is resistance of GUE to appropriate medical therapy (ie, persistent clinical signs typical of GUE, such as anorexia, hematemesis, melena, or anemia). Dogs and cats with GUE may also show signs of septic peritonitis and acute abdomen if the ulcer has perforated.

Background

Life-threatening upper GI bleeding may cause the hematocrit to decrease so quickly that it raises concern that death could occur before bleeding can be stopped or transfusion can be started. Patients that require more than one transfusion of whole blood or packed red blood cells within a 24-hour period to maintain the hematocrit should also be considered to have “life-threatening” hemorrhage. Finally, it is ill-advised to continue medical therapy in patients with hematocrits that cannot be sustained above 12% to 14% despite repeated transfusions because the margin of safety is too slim—in other words, even a small further decrease in hematocrit could be fatal. Surgical resection of the ulcerated area is recommended in such cases.

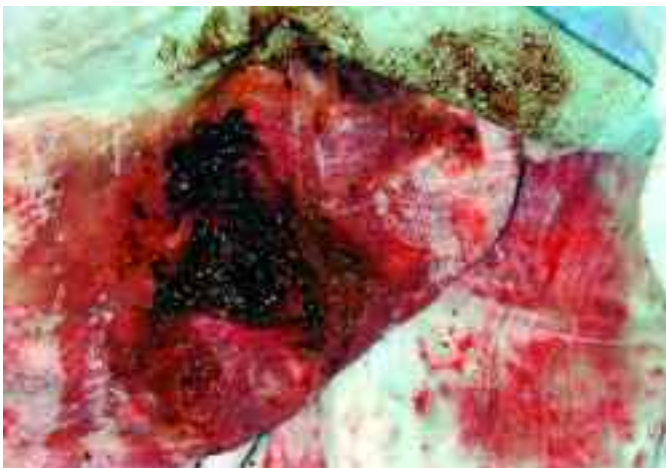
GUE is considered refractory if therapy with appropriate doses of histamine-2 receptor antagonists, carafate, and/or proton pump

inhibitors fails to substantially ameliorate clinical signs within 5 to 7 days of the start of therapy. Complete resolution of an ulcer and the associated clinical signs may take some time; however, lack of any substantial improvement within 5 to 7 days raises the concern that the ulcer will not respond adequately to medical therapy and that a more determined search for an underlying cause should be undertaken.

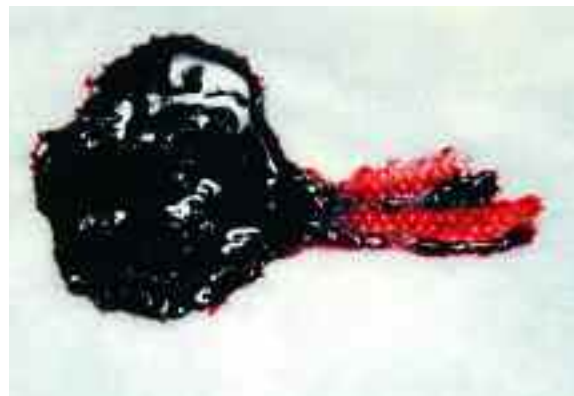
Clinical Signs

Upper GI bleeding has historically been believed to cause the patient to vomit obviously red blood; however, the vomitus more commonly consists of digested blood with a coffee-ground appearance. Indeed, many patients with upper GI hemorrhage do not vomit at all. Some GUE patients have only melena, recognized as “midnight-black” stools that are often “tarry” in consistency (not simply “dark” stools). Anemia and hypoproteinemia are expected clinical patholog-

continues



Hematemesis: Both obvious red blood and dark, semidigested blood are shown.



Melena: Note that the stool appears black until spread on white paper, at which time a red color can be seen.

ic findings, except in peracute cases in which insufficient time has passed to allow redistribution of water from the intracellular to the intravascular compartment after a major episode of bleeding. Patients with peracute disease and severe hemorrhage may have signs of hypovolemic shock (ie, tachycardia, weak pulse, prolonged capillary refill time, pale mucous membranes) but have a normal hematocrit. In chronic cases, one might see the “classic” microcytic, hypochromic anemia of iron deficiency, but this is not particularly common in the author’s practice.

GUE patients with deep ulcers are at risk for serosal perforation. Such signs as fever; severe, apparent abdominal pain; shock; and other signs of worsening clinical status should prompt evaluation for perforation. Other compatible clinicopathologic findings include an inflammatory leukogram (often with a marked left shift), hypoglycemia, and hyponatremia. Abdominal ultrasonography may allow visualization of a gastric or intestinal mass even in the presence of effusion. Perforation is classically confirmed either by the finding of spontaneous pneumoperitoneum on abdominal radiographs or the finding of spontaneous abdominal effusion characteristic of sepsis (degenerate neutrophils, very high neutrophil counts, bacteria, and/or plant matter).

What Information the Specialist Will Need

When referring patients that are believed to have severe or resistant upper GI bleeding, the most important information includes the following:

- When was decreased appetite *first* noted?
- When was vomiting *first* noted?
- Has a coffee-ground-like matter been seen in any vomitus?
- Has melena been seen?
- Have histamine-2 receptors or proton pump inhibitors been given? If so, at what doses?

- Has sucralfate been used, and in particular, has it been used within the past 24 hours? (Administering sucralfate within 12 to 24 hours of endoscopy can make it very difficult to find ulcers or erosions)
- Is there a history of any use of NSAIDs within 4 to 5 days of the onset of anorexia, vomiting, or melena? It is important to query the client very closely about prescriptions as well as over-the-counter NSAIDs.
- Have any steroids been administered within 3 to 4 days of the onset of clinical signs? (This includes topical steroids used in the eyes and ears or on the skin.)

A list of all hematocrits and serum protein or serum albumin concentrations that have been determined since illness was noted; results of any other laboratory work, especially coagulation testing; and results or copies of any abdominal radiographs or ultrasonographic imaging should also be provided.

What the Referring Veterinarian Should Ask For

The referring veterinarian should generally request (or expect) the following:

- Confirmation that the bleeding is not due to a coagulopathy, if not evaluated before referral
- Confirmation that GI bleeding exists
- Determination of whether the cause is a resectable ulcer or numerous erosions that cannot be resected
- Determination of the underlying cause, if possible.

What to Expect from the Specialist

If upper GI hemorrhage is life-threatening or has been resistant to medical therapy, localization of the source of bleeding typically involves ultrasonographic imaging and/or endoscopy.

Resection of nonmalignant ulcers is typical. Checking for coagulopathy should be routine, unless historical findings (eg, strong evidence of an ulcer caused by NSAIDs) or imaging results (eg, gastric mass) make coagulopathy so unlikely that such a study would be inappropriate. Refractory or perforated ulcers are generally resected, and resected matter is usually evaluated histopathologically. Preoperative preparation, such as packed red blood cells or oxyglobin transfusion and colloidal support, may be required. Stable patients with refractory ulceration may warrant preoperative evaluation for hypoadrenocorticism (ACTH-stimulation testing). The patient is typically kept in the referral clinic for 1 to 2 days after surgery to ensure that GI bleeding does not continue. It is reasonable to ask the referring clinic to monitor the patient instead of keeping the patient, as long as the referring clinic can provide close surveillance and emergency care, such as transfusion if needed.

Follow-up Communication from the Specialist

The specialist should communicate the suspected cause of GUE, what and how long medical therapy should be continued, what monitoring is required (eg, hematocrit, serum protein concentration), and the steps that should be taken to minimize recurrence (especially changes in pain control protocols to avoid NSAIDs). Anytime resection is done the client should be educated about signs that might indicate dehiscence, leakage, and peritonitis as well as pancreatitis (which can be secondary to gastric surgery). ■

See Aids & Resources, back page, for references, contacts, and appendices.