

CHRONIC GASTRITIS

(LONG-TERM INFLAMMATION OF THE STOMACH)

BASICS

OVERVIEW

- Intermittent vomiting of more than 1 to 2 weeks' duration, secondary to inflammation of the stomach (known as "gastritis")
- Presence of shallow ulcers (known as "erosions") or ulcers in the stomach, dependent on the cause and duration of the stomach inflammation

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Dogs and cats

Breed Predispositions

- Old, small-breed dogs (for example, Lhasa apso, shih tzu, miniature poodle)
- Basenjis and the Drentse patrijshond (Dutch partridge dog) breed can develop chronic hypertrophic gastritis, in which the stomach tissues are enlarged (known as "hypertrophy")

Mean Age and Range

- Varies with underlying cause

Predominant Sex

- Varies with underlying cause

SIGNS/OBSERVED CHANGES in the ANIMAL

- Vomit is frequently bile stained, and may contain undigested food, flecks of blood, or digested blood (so called "coffee grounds")
- Frequency of vomiting varies from daily to every few weeks and increases as gastritis progresses
- Vomiting may be stimulated by eating or drinking
- Early morning vomiting before eating may indicate "bilious vomiting syndrome," a condition in which contents in the upper small intestine (duodenum) move backward into the stomach (known as "gastroduodenal reflux"); the contents contain bile acids, a normal product involved in fat digestion; the bile acids may interfere with the normal stomach lining protection and lead to inflammation of the stomach (gastritis)
- May see weight loss with long-term (chronic) loss of appetite (anorexia)
- May see black, tarry stools (known as "melena") due to the presence of digested blood in the bowel movement, if the animal has bleeding ulcers in the stomach
- Diarrhea, if animal also has intestinal disease
- May have pale gums and moist tissues of the body (known as "mucous membranes") if the animal has low red-blood cell counts (anemia) from long-term (chronic) blood loss

CAUSES

- Inflammatory—immune-mediated; dietary allergy or intolerance; unknown cause (known as "idiopathic" disease)
- Dietary indiscretion—animal eats plant material; foreign objects; chemical irritants
- Toxins—fertilizers; herbicides; cleaning agents; heavy metals
- Metabolic or endocrine (hormonal) disease—excess levels of urea and other nitrogenous waste products in the blood (known as "uremia" or "azotemia"); chronic liver disease; inadequate production of steroids by the adrenal glands (known as "hypoadrenocorticism" or "Addison's disease"); inflammation of the pancreas (known as "pancreatitis")
- Cancer—gastrinoma (a type of tumor usually found in the pancreas that secretes "gastrin," a hormone that stimulates acid production in the stomach); gastric adenocarcinoma (stomach cancer); gastrointestinal lymphoma (cancer originating from a type of white blood cell, known as a "lymphocyte," that develops in lymph nodes and other tissues of the body); leiomyosarcoma (cancer derived from smooth muscle of the stomach or intestines)
- Stomach polyps
- Parasitism—*Ollulanus tricuspis* and *Gnathostoma* (cats); *Physaloptera* (dogs, cats)
- Drugs—nonsteroidal anti-inflammatory drugs (NSAIDs); steroids
- Infectious—*Helicobacter*, bacteria associated with inflammation of the stomach (gastritis) and stomach ulcers; *Pythium*, a water mold that causes pythiosis; viral (canine distemper virus in dogs, feline leukemia virus [FeLV] in cats)
- Miscellaneous—backward or reverse flow of upper small intestinal (known as "duodenal") contents into the stomach (known as "gastroduodenal reflux") leading to bilious vomiting syndrome; stress; absence of hydrochloric acid (HCl) in the stomach fluids (known as "achlorhydria")

RISK FACTORS

- Medications—nonsteroidal anti-inflammatory drugs (NSAIDs); steroids
- Environmental—unsupervised/free-roaming pets are more likely to ingest inappropriate foods or materials

- Ingestion of a dietary ingredient, to which an allergy or intolerance has been acquired

TREATMENT

HEALTH CARE

- Most patients are stable at presentation, unless vomiting is severe enough to cause dehydration
- Typically can be managed as an outpatient, pending diagnostic testing or undergoing clinical trials of special diets or medications
- If patient is dehydrated or if vomiting becomes severe, hospitalize and treat with appropriate intravenous (IV) fluid therapy

DIET

- “Nothing by mouth” (that is, no food or water by mouth) for 12 to 24 hours, if vomiting frequently
- Soft, low-fat food, ideally from single protein and carbohydrate sources
- Non-fat cottage cheese, skinless white-meat chicken, boiled hamburger or tofu as a protein source; and rice, pasta, or potato as a carbohydrate source, in a ratio of 1:3
- Frequent, small meals (every 4 to 6 hours or more frequently)
- Can use novel protein source (that is, feeding a protein to which the animal has never been exposed) or hydrolyzed protein diet (for which the protein source has been processed to break down the protein into smaller units, less likely to cause an allergic response), if dietary allergy is suspected
- Feed diets for a minimum of 3 weeks to assess adequacy of response; often requires longer trial periods of 6 to 8 weeks
- Feed a late night meal to help prevent bilious vomiting syndrome in the early morning hours

SURGERY

- Surgical management, if a mass or enlargement of stomach tissue (known as “hypertrophy”) is causing a blockage of the stomach, preventing movement of the stomach contents into the intestines (known as “outflow obstruction”)
- Surgical incision into the stomach (known as “gastrotomy”) for removal of foreign objects, if retrieval of the foreign object using a special, lighted, medical instrument (known as an “endoscope”) that is passed through the mouth and down the esophagus (the tube from the throat to the stomach) and into the stomach is unsuccessful or if an endoscope is not available

MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Varies with underlying cause
- Treat any stomach erosions and ulcers
- Give steroids for long-term (chronic) inflammation of the stomach (gastritis) secondary to suspected immune-mediated mechanisms, if animal does not respond to dietary management
- Treatment for inflammation of the stomach caused by *Helicobacter*: [amoxicillin](#), [Pepto-Bismol®](#) and [metronidazole](#)
- Medications to prevent or control vomiting (known as “antiemetics”) for fluid and electrolyte disorders caused by frequent or profuse vomiting; electrolytes are chemical compounds (such as sodium, potassium, chloride) necessary for the body to function
- [Metoclopramide](#), [cisapride](#), or low-dose [erythromycin](#) to increase stomach emptying and improve intestinal motility, if stomach emptying is delayed or backward or reverse flow of upper small intestinal (known as “duodenal”) contents into the stomach (known as “gastroduodenal reflux”) is present
- Synthetic prostaglandin E ([misoprostol](#)) to prevent stomach ulcers with nonsteroidal anti-inflammatory drug (NSAID) toxicity
- Drugs to suppress the immune response (known as “immunosuppressive drugs”), such as [azathioprine](#), if an immune-mediated mechanism is suspected and the animal has not responded to dietary management and steroid administration adequately; expect response to occur in 2 to 3 weeks
- When in need of immediate suppression of the immune response (immunosuppression), use [chlorambucil](#)

FOLLOW-UP CARE

PATIENT MONITORING

- Resolution of clinical signs indicates a positive response
- Blood work to monitor electrolytes (such as sodium, potassium, and chloride) and acid–base status, if initially abnormal
- Complete blood counts should be obtained weekly and then reduced to every 4 to 6 weeks for patients on drugs to suppress the immune system—[azathioprine](#), [chlorambucil](#)
- Repeat diagnostic workup and consider possible re-biopsy if signs decrease, but do not resolve

PREVENTIONS AND AVOIDANCE

- Avoid medications (such as steroids, nonsteroidal anti-inflammatory drugs [NSAIDs]) and foods that cause stomach irritation or allergic response in the patient
- Prevent free roaming of the animal and potential for dietary indiscretion

POSSIBLE COMPLICATIONS

- Progression of inflammation of the stomach (gastritis) from superficial (that is, involving just the surface of the lining) to atrophic gastritis (a condition in which the lining is thinner than normal)
- Stomach erosions and ulcers with progressive damage to the lining of the stomach (mucosal damage)
- Aspiration pneumonia
- Electrolyte or acid–base imbalances

EXPECTED COURSE AND PROGNOSIS

- Varies with underlying cause

KEY POINTS

- Inflammation of the stomach (gastritis) has numerous causes
- Diagnostic workup may be extensive; usually requires biopsy to identify disease (known as “definitive diagnosis”)

