

PROTOCOL FOR THE VOMITING PET

1. **Is the pet vomiting or regurgitating?** If regurgitation, see separate protocol on that.
2. **Is the vomiting acute (<1-2 weeks) or chronic (>2 weeks?). Is the vomiting or illness severe?**
3. **Acute, mild vomiting in a well hydrated and apparently well patient** can be managed with minimal diagnostics (fecal flotation and direct smear) and empirical treatment. Make sure heartworm test is current for dogs and FeLV/FIV test for cats. Of course, offer bloodwork to all, and the top clients will probably do it. Others may want to do bloodwork at the next step if the patient fails to improve. If the pet vomits only after eating very fast, suggest a “slow bowl” (specify an effective brand). Ask if diet has changed, or they pet has eaten anything unusual or taking any new medicines or supplements. Run parvo test on all vomiting puppies – swab tonsils and then rectum.
 - Cerenia injection, and send home PO meds x 4 days.
 - Metronidazole 5-7 mg/lb PO BID x 7 days.
 - Deworm (pyrantel/Profender® for cats, Panacur for dogs – the usual protocol)
 - Bland diet
4. Diagnose and treat **severe vomiting or ill dogs with vomiting, and dogs with abdominal pain** ASAP. Proceed with diagnostics **for moderate to severe acute vomiting, for mild to moderate chronic vomiting in relatively well animals**, including a second visit for vomiting which was acute and mild but did not respond to empirical therapy.
 - **Initial Diagnostics:** CBC, panel with electrolytes, repeat fecal flotation and direct smear. Treat problems revealed. Be sure to get UA if azotemic. Be sure to get reticulocyte count if PCV <30%. Thyroid panel in all cats older than 5-8 years old. Coagulation tests if vomiting blood, and they are available.
 - If **significant vomiting is happening in a dog that seems mildly ill**, GI focused diagnostics are next, to include abdominal radiographs + barium, abdominal ultrasound, GI panel or even scoping.
 - If **vomiting is one of the symptoms in a significantly ill dog**, systemic diagnostics are next, to include x-rays of the chest/abdomen, abdominal ultrasound and possibly ACTH stimulation test.
 - If all else fails, **diagnostic surgery** is indicated, following adequate preparation of the patient. Always take multiple biopsies, even if all appears normal. Can refer for **fluoroscopy** if motility disorder is suspected.
 - i. In dogs, take stomach, duodenum, ileum, jejunum, liver and mesenteric lymph node. Do splenic cytology, and sample only if indicated by cytology or grossly abnormal. Sample pancreas, kidneys or colon only if abnormal. If high white count, take muscle biopsy looking for Hepatozoon. Be sure to run the entire gut, from diaphragm/esophagus to descending colon/pelvic inlet.

- ii. In cats, take stomach, duodenum, jejunum, liver, mesenteric lymph node and pancreas. Do splenic cytology, and sample only if indicated by cytology or grossly abnormal. Sample kidneys or colon only if abnormal. Be sure to run the entire gut, from diaphragm/esophagus to descending colon/pelvic inlet.

Pattern recognition:

- *Addison's Disease*: dehydration, \pm low sodium, \pm high potassium, \pm hypercalcemia, blood in the stool/vomit, low albumin, low glucose, even all normal early on. Treat crisis, and do ACTH stim.
- *Liver Disease*: elevated ALT/ALKP/GGT, low albumin, abnormal cholesterol, low glucose, icterus without anemia. Bile acids to assess liver function. Treat liver disease, plus Cerenia[®] and antacids, and sucralfate if blood in vomit.
- *Kidney Disease*: high BUN/creat/phos with Isosthenuria, anemia when chronic. Treat renal failure, plus Cerenia[®] and antacids, and sucralfate if blood in vomit.
- Azotemia with mild urine concentration: *Addison's Disease*, *pyelonephritis*.
- *GI blood loss*: regenerative anemia, low albumin, low globulin, \pm high white count. Treat cause, plus sucralfate or barium, Cerenia[®] and antacids.
- *Protein losing enteropathy*: low albumin, low globulin, ascites (pure transudate or modified transudate). Treat cause if possible.
- *Neoplasia*: older pet, may have protein losing enteropathy, high globulin, fever, high white count, hypercalcemia.
- *Hemorrhagic gastroenteritis*: high PCV, raspberry jam stool. Treat IV fluids, antibiotics, Cerenia[®]. If accompanied by collapse, treat for anaphylaxis. If high phosphorus/calcium, investigate bromethalin or eczema cream toxicity.
- *Intestinal foreign body*: abdominal discomfort, fever, high white count, young/active dog, ileus on x-rays or ultrasound. Relieve obstruction, treat dehydration/shock/infection.
- *Parvovirus*: young unvaccinated dog, low white count, positive parvo test. Treat IV fluids, antibiotics, colloids, Cerenia[®], metoclopramide.
- *Intussusception*: severe or prolonged diarrhea, followed by acute vomiting and abdominal pain, mass on palpation, gut target lesion on ultrasound. Treat by surgery, and for infection.
- *Pancreatitis in dogs*: dietary indiscretion, vomiting, abdominal pain, bloody stool, icterus without anemia, low albumin, high liver enzymes, low calcium, lipemia. Confirm with cPL or PLI. Treat IV fluids, \pm antibiotics, Cerenia[®], metoclopramide or cisapride if ileus, colloids, low fat low fiber diet, diabetes/ketoacidosis if present, pain meds.
- *Pancreatitis in cats*: anorexia, lethargy, dehydration, sitting hunched up, poor grooming, only 25-30% vomit, abdominal discomfort, icterus, low albumin, high liver enzymes, low calcium, *lipemia*. Treat fluids, Cerenia[®], metoclopramide or cisapride if ileus, colloids, high protein diet, diabetes/ketoacidosis, pain meds, feeding tube.
- *Limbic epilepsy*: hypertrophic salivary glands, vomits many times each day, all testing normal, responds to anticonvulsants.
- *Ethylene glycol*: ataxia for a day or two, followed by high BUN/creat/phos, calcium oxalate crystalluria, medullary rim sign on ultrasound, hypocalcemia. Treat with IV fluids, ethanol, 4MP.
- *Physaloptera*: young dog or cat with profuse vomiting and weight loss, \pm anorexia, usually alert and active. Responds to deworming but may be reinfected.
- *Motility disorder*: testing normal, prolonged transit time on barium study with no obstruction, idiopathic regurgitation or megacolon, other signs of peripheral neuropathy (laryngeal paralysis, spinal or cranial nerve reflex deficits, less than 4-5 gastric contractions per minute on ultrasound).

Treatment considerations:

- Misoprostol for NSAID GI toxicity.
- Hematemesis: Treat underlying cause. Continue sucralfate for 5-7 days after hematemesis resolves. Continue proton pump or H2 blockers for 10-14 days after hematemesis resolves

Barium study for vomiting:

Avoid drugs that inhibit GI motility

- Opiates
- beta agonists (bronchodilators)
- Anticholinergics (atropine, aminopentamide)

1. **Shoot scout films**
2. **Give barium**
 - 4-6 ml/lb small dogs and cats
 - 2-4 ml/lb large dogs
3. **Immediate for esophagram**
4. **Within 5 minutes for gastrogram**
5. **30 minutes, and then every 1-2 hours until barium is gone from stomach and enters the colon**

Thumb Rules for GI Transit Times

- Barium should be in duodenum within 20 minutes
- Stomach should be empty of liquid barium within 3-4 hours in the dog and 1 hour in the cat
- Barium coated food can remain in the stomach for 12-15 hours in the dog and 4-5 hours in the cat
- Make sure patient is fasted if you want to evaluate transit time accurately
- Never hesitate to extend barium series to the next day if barium is not yet completely in the colon