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COMMON ERRORS IN THE DIAGNOSIS AND MANAGEMENT OF GI DISEASES IN DOGS AND CATS

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As a clinician who manages referral gastrointestinal (GI) cases and provides frequent telephone consultation to referring veterinarians, I have recognized a similar pattern of common diagnostic or therapeutic errors. The purpose of this seminar is to review these common errors, and suggest ways to avoid these common pitfalls.

CHRONIC VOMITING

Chronic vomiting is a common problem in dogs and cats. A major diagnostic error is the failure to differentiate regurgitation from vomiting. To most clients, any retrograde movement of ingesta from the mouth is described as vomiting. The same is true when a client does not observe the "act," but finds the "vomitus" in the house. Regurgitation is due to esophageal disorders, while vomiting is caused by either systemic diseases or gastric and/or small intestinal conditions. The diagnostic plan for both of these problems is very different. Failure to differentiate between vomiting and regurgitation can lead to catastrophic errors in case management. "Vomiting" cases can undergo exploratory laparotomy when a diagnosis of megaesophagus may be evident on survey thoracic radiographs.

The best way to distinguish between these two problems is based on a description of the act. Vomiting is a centrally mediated reflex associated with nausea (salivation, frequent swallowing, and licking of the lips), retching and abdominal contractions, and finally expulsion of the ingesta. The presence of yellow discoloration is due to bile from the small intestine, and indicates that vomiting rather than regurgitation has occurred. Cats often vocalize during the nausea phase. Regurgitation is a passive process where retained ingesta moves from the esophagus into the pharynx, where it initiates a gag reflex, and is expelled from the mouth. Retrograde movement occurs due to increased intrathoracic pressure associated with activity, changes in body position, or extreme esophageal dilation.

Another common diagnostic error is to proceed with intensive or invasive diagnostic procedures before eliminating a dietary or environmental cause of chronic vomiting. Dietary indiscretion is a common cause of chronic vomiting. Indiscretion may be obvious (table scraps, garbage ingestion, free roaming behavior, etc.) or may require a thorough history and a cooperative client (dog or cat feces, young children in the household, exposure to house plants or chemicals, etc.). In cats, hair ingestion can be both frequently over- and under-diagnosed. Frequent grooming with a wire slicker brush to remove hair and lubrication with petroleum based products is often indicated. In some cases when indiscretion cannot be identified, feeding a highly digestible high quality diet that is low in fat and fiber or a hypoallergenic diet for 3-4 weeks may resolve the vomiting.

Vomiting may be caused by many systemic diseases (hyperthyroidism, feline heartworm disease, renal failure, liver diseases, hypoadrenocorticism, or diabetes mellitus). These causes should not be overlooked before performing expensive, time consuming, and potentially invasive diagnostic tests. Unknowingly placing a patient with renal failure under general anesthesia for endoscopy or exploratory surgery can have devastating results!

Exploratory laparotomy is often performed in chronically vomiting patients as a diagnostic test. A devastating error is the failure to collect biopsy samples, if the stomach and duodenum appear normal on inspection and palpation. Full-thickness biopsy samples should always be collected from the stomach and duodenum and the entire abdomen thoroughly explored. The regional lymph nodes, liver, gall bladder, and pancreas should be carefully inspected. The gastric mucosa should be inspected and a finger placed through the pylorus to assess outflow obstruction. If lymph nodes are enlarged biopsy samples should be collected.

A common therapeutic error is the frequent and long term use of antiemetics. Anticholinergics may lead to gastric and duodenal atony, which can cause vomiting. Failure to rapidly respond to antiemetic medications indicates a need to aggressively pursue diagnosis. By decreasing the frequency and potentially the severity of the most obvious clinical sign to the owner, vomiting, it is possible to mask a progressive disorder, and give the clinician a false sense of security. An example would be a gastric foreign body that moves into the small intestine causing a complete bowel obstruction and possible perforation of the bowel. Long term use of antiemetics is rarely indicated, usually after a definitive diagnosis has been reached and specific therapeutic measures have failed to control clinical signs.

CHRONIC DIARRHEA

Chronic diarrhea is a very common and frustrating condition. Because of the large number of potential causes, it is important to follow a systematic diagnostic plan. The most important initial step is to localize the diarrhea to the small or large bowel. Each area has a distinct differential diagnosis and a vastly different diagnostic plan. Small bowel diarrhea has the following characteristics: mild or moderate increased frequency, increased volume/defecation, melena, and weight loss. Characteristics of large bowel diarrhea include: moderate to severe increased frequency, decreased to scant volume/defecation, increased mucus, hematochezia, and tenesmus. Diarrhea should be localized based on history and physical examination during the initial visit. Because of stress, changes in environment, activity level, and diet, fecal characteristics often change during hospitalization, leading to an inaccurate localization of the diarrhea.

The two most common causes of chronic diarrhea are dietary indiscretion/intolerance and GI parasites. Dietary indiscretion was described in the chronic vomiting section. Once again, if indiscretion cannot be identified, a 3-4 week trial with a bland, highly digestible, high quality, low fat and low fiber diet or a hypoallergenic diet may eliminate the diarrhea, avoiding a costly and potentially invasive diagnostic workup.

Multiple fecal examinations should identify most of the common parasitic causes of diarrhea. However, whipworms shed eggs intermittently and in low numbers and Giardia may not be consistently detected with routine flotation techniques. If large bowel diarrhea is present, therapeutic deworming for whipworms should always be instituted prior to additional diagnostic testing. Three fecal examinations with zinc sulfate will allow identification of most cases of Giardia. Centrifugation of zinc sulfate is critical to correctly identify Giardia cysts and also whipworm ova. Even if Giardia is not
identified, treatment with fenbendazole or metronidazole is indicated in cases with small bowel diarrhea. I recommend 50 mg/kg/day of metronidazole for 5-6 days to treat Giardia in dogs and cats.

Chronic small bowel diarrhea often requires mucosal biopsy for diagnosis. If endoscopy is not available, biopsy samples can be obtained by exploratory surgery. As in chronic vomiting cases, during exploratory surgery samples should always be collected from the duodenum, jejunum, and ileum, even if the small bowel looks and feels normal. Many cases with severe clinical signs only have microscopic lesions!

Although pancreatic exocrine insufficiency (PEI) is a relatively uncommon disorder in dogs, many cases with chronic diarrhea are placed on pancreatic enzyme supplementation for long periods of time. The disease is most common in young German shepherd dogs and causes severe failure to thrive or weight loss and frequent profuse diarrhea. Measurement of serum tryptase-like immunoreactivity (TLI) will definitively diagnose or rule out the condition. In cases without PEI, a correct diagnosis can be pursued, instead of the dog deteriorating further while awaiting a response to enzymes and the owner wasting their money on an expensive medication. In addition, the secondary complication of small intestinal bacterial overgrowth may result in failure to respond to enzyme replacement. In these cases making a definitive diagnosis of PEI is crucial. Measurement of serum B12 concentrations is also important in dogs with PEI as parenteral supplementation may be indicated.

It is extremely important in cats to evaluate feline leukemia virus and feline immunodeficiency virus, as both frequently cause a mild to moderate small bowel diarrhea. In older cats hyperthyroidism causes diarrhea and weight loss, and should be eliminated prior to further diagnostic workup. Many cats with chronic GI diseases have reduced serum B12 concentrations. Measurement of B12 and parenteral supplementation may be necessary to relieve clinical signs.

Many causes of diarrhea will respond, at least temporarily, to a relatively short course of prednisone therapy. In my opinion, prednisone should not be used as symptomatic therapy, but only after a diagnosis of inflammatory bowel disease has been reached. Prednisone can worsen diarrhea caused by infectious agents and cause GI hemorrhage. In addition, prednisone may alter the microscopic appearance of the mucosa in cases of inflammatory bowel disease (IBD) and lymphosarcoma, making subsequent histologic diagnosis more difficult. Inflammatory bowel disease usually requires long term therapy, and in many cases the use of multiple drugs and dietary management. Administration of a high dose of corticosteroids and appropriate adjustment of therapy must be based on a definitive diagnosis. In addition, rapid reduction of prednisone dosage in cases of IBD according to previously set schedule may lead to return of resistant clinical signs. I recommend that prednisone be reduced at 2-4 week intervals as long as clinical signs are controlled. Accurate assessment of endoscopic biopsies is vital for successful treatment of dogs and cats with IBD. A recent study clearly demonstrated a large difference in the interpretation of endoscopic biopsies between pathologists. Before a diagnosis of IBD is made, and potentially immunosuppressive therapy utilized, a thorough diagnostic plan should be followed to insure that the inflammation detected on biopsy samples is idiopathic. Recently, many cats with a histologic diagnosis of IBD responded to hypoallergenic diet therapy and did not need immunosuppressive medication.

A similar therapeutic error is encountered with short term use of sulfasalazine in dogs with large bowel diarrhea. Sulfasalazine consists of sulfapyridine linked to 5-amino-salicylic acid. In the colon, bacteria break the bond, liberating the two components. Sulfapyridine is absorbed while 5-aminosalicylic acid topically reduces inflammation by antiprostaglandin and antileukotriene activity. Chronic colitis requires long-term, and sometimes life-long therapy. In my experience, if clinical signs return after short term sulfasalazine therapy, they may be more difficult to control than if sulfasalazine was initially continued and slowly tapered at 2-4 week intervals. I suggest that sulfasalazine be used for biopsy-proven cases of chronic colitis in dogs, and that acute colitis be treated symptomatically by removing an inciting cause, resting the colon, and feeding a low fat and highly digestible diet. A common side effect of sulfasalazine is reduced tear production leading to keratoconjunctivitis sicca. Dogs receiving high dose therapy should have tear production measured every 2-4 weeks. Because of their sensitivity to salicylates, the drug should be used cautiously in cats.

REFERENCES