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VDIC Case # 110-2014
June 10th, 2014

VDIC Consultant: David Bruyette, DVM, DACVIM



Referral Information:

A 1 year old MC black Labrador retriever presented to the RDVM for evaluation of severe diarrhea and weight loss of 1 months duration but loose stool had been present for 6-7 months. The current weight was 23 kg with a BCS of 4/9. The pet had been acquired at 9 weeks of age and had not left the Los Angeles area. Routine vaccinations and deworming had been performed. He has been on an adult dry food for 3 months with no dietary changes. Past medical history is unremarkable. Current medications include metronidazole at 250 mg PO BID with little to no change in the character of the stool.

Physical Examination:

On physical examination no significant abnormalities were detected with the exception of poor body condition and a dry, flaky hair coat.

Initial Diagnostic Tests:

Abnormalities on the most recent laboratory work (Data on file at VDIC; Case # 110-2014) included:

Hypoproteinemia: 3.7 g/dl
Hypoalbuminemia: 2.0 g/dl
Hypoglobulinemia: 1.7 g/dl

The fecal including a giardia ELISA was negative. The urinalysis had a specific gravity of 1.045 with no evidence of proteinuria. The CBC was normal.

VDIC Initial Assessment:

The history, clinical signs and laboratory work support the diagnosis of a panhypoproteinemia secondary to a protein losing enteropathy (PLE). Causes of PLE include inflammatory bowel disease (IBD), infiltrative infectious diseases (histoplasmosis, pythiosis) and neoplasia (lymphoma). Given the age of the patient IBD and infectious causes are most likely. I am also concerned about the duration of the diarrhea as IBD is very unusual to develop in a dog less than 6 months of age so we should also consider a concurrent maldigestive disorder such as exocrine pancreatic insufficiency (EPI) and a B12 deficiency.

Suggested Plan:

Diagnostic: I would start with measurement of TLI and cobalamin (B12) to assess maldigestion. Folate levels have not proven to be very reliable in assessing gastrointestinal function as they are highly dependent on dietary folate intake. The serum samples should be obtained after a 12 hour fast.

Therapeutic: Pending test results

Follow-Up Information:

June 17th, 2014:

The TLI concentration was 0.7 ug/L (5.7 - 45.2 ug/L).

The B12 concentration was 150 ng/L (251-908 ng/L).

These results are diagnostic for EPI. Deficiency of B12 commonly occurs as a result of a lack of pancreatic intrinsic factor. Intrinsic factor binds to dietary B12 and the complex is then absorbed in the ileum.

While EPI is present the finding of a severe PLE is not consistent with EPI alone being a cause of the clinical signs. Therefore we may need to consider additional diagnostics should the symptoms not improve following treatment of the EPI.

Assessment:

EPI
B12 deficiency
PLE

Treatment Plan:

I would recommend the following:

1. B12 at 1,000 ug IM weekly for 4 weeks then monthly thereafter.
2. Pancreatic enzyme replacement: Initially, one teaspoon per 10 kg body weight per meal. Oral bleeding has recently been reported in 3 of 25 dogs with EPI treated with pancreatic enzyme supplements. The oral bleeding stopped in all 3 dogs after the dose of pancreatic enzymes was decreased. Moistening the food/pancreatic powder mix also appears to decrease the frequency of this side effect. When clinical signs have resolved, the amount of pancreatic enzymes given can be gradually decreased to the lowest effective dose, which may vary from patient to patient and from batch to batch of the pancreatic supplement.
3. Continuation of the metronidazole at 250 mg PO BID.
4. A recheck of the patient's clinical signs and body weight in 2-3 weeks.

Case Follow-Up:

July 2nd, 2014:

The weight had increased to 24.5 kgs but the stool has remained soft. There has been no change in appetite and no vomiting has been noted.

While weight gain has been observed I am still concerned about the persistent diarrhea. I would recheck the patient in 2 weeks and repeat the chemistry panel at that time.

July 16th, 2014:

The weight was constant at 24.4 kgs. There had been no additional improvement in the character of the stool. Laboratory work revealed:

Hypoproteinemia: 4.0g/dl
Hypoalbuminemia: 2.0 g/dl
Hypoglobulinemia: 2.0g/dl

The persistent panhypoproteinemia and clinical signs suggests a concurrent disorder such as IBD. I would recommend an upper intestinal endoscopy to obtain gastric and small intestinal biopsies.

July 30th, 2014

Gastric and duodenal biopsies were obtained via endoscopy. The diagnosis was lymphoplasmacytic enteritis and gastritis consistent with inflammatory bowel disease. There was no evidence of neoplasia or lymphangiectasia. Fibrosis was not evident. Given these findings I would recommend that we start treatment with budesonide at 3 mg once daily. Budesonide may be a better choice than prednisone in a large breed dog due to the frequency of adverse side effects. In addition, a recent paper showed that the use of VSL # 3 was effective in managing clinical signs of inflammatory bowel disease in dogs. This medication is available on Amazon.com and local health food stores. The dose is one

capsule per 10 kg twice daily. I would recheck the dog in one month and continue with the metronidazole, pancreatic enzyme replacement and B12 injections. Given the findings of IBD and EPI I would switch to a low fat diet with a novel protein source such as duck, rabbit or venison.

August 28th, 2014

The owners report that the clinical signs have largely disappeared. The weight is now 27.5 kg. At this point I would recommend discontinuing the metronidazole. I would continue with the B12 injections monthly and continue with lifelong pancreatic enzyme replacement therapy. We can also decrease the budesonide to 3 mg every other day. I would recheck the pet in one month.

September 14th, 2014

The albumin and globulins are 3.2 and 3.5 respectively. I would suggest lowering the budesonide dose to twice weekly for 1 month and if clinical signs are still well controlled, we can discontinue the medication.

Prognosis:

Dogs with EPI have an excellent long term prognosis though it will require life-long replacement therapy and monthly B12 injections. I would check the serum B12 levels twice a year just prior to the next injection with the goal of achieving B12 levels > 1000 ng/L. Long term complications reported in poorly controlled EPI dogs include chronic diarrhea and small intestinal volvulus.

The concurrent IBD in this case was a major contributing factor to the PLE. In most cases, once the inflammation has subsided with steroid therapy (in this case budesonide) the patients can be maintained on diet alone. Occasional GI episodes may occur but unless they are persistent or result in the return of significant protein loss, steroid therapy may not be required.