Feline Chronic Enteropathy

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THE CASE

Plato, an 8-year-old spayed domestic longhair cat from east Texas, is presented for an approximate 4-week history of weight loss, small-bowel diarrhea, mild polyphagia, and occasional vomiting. Her owners feel her energy level is slightly decreased, and she has lost approximately 1 lb (0.45 kg).

On physical examination, Plato is responsive and alert. Temperature, pulse, and respiration rate are normal. BCS is approximately 4 of 9, and Plato's haircoat is slightly unkempt. Mucous membranes are light pink, and capillary refill time is less than 2 seconds. Heart and lung auscultation is normal, but slightly thickened bowel loops with no distinct masses are noted during abdominal palpation.

CBC reveals a stress leukogram characterized by leukocytosis, mild neutrophilia, and lymphopenia. Mild nonregenerative anemia is present. Serum chemistry profile reveals mild hypoalbuminemia and decreased total protein. Urinalysis and abdominal radiography findings are unremarkable. A GI panel (ie, trypsin-like immunoreactivity, feline pancreatic lipase immunoreactivity, cobalamin, folate) is normal except for hypocobalaminemia. Abdominal ultrasonography reveals thickened intestinal walls with a prominent and hypoechoic musculoskeletal layer.[1] No enlarged lymph nodes or other

TABLE

TEST RESULTS

Test	Result	Reference Range	Finding
Leukocytes	15 400 cells/μL	4500-14 000 cells/μL	Leukocytosis
Neutrophils	11 000 cells/μL	2000-9000 cells/μL	Mild neutrophilia
Lymphocytes	700 cells/μL	1500-7000 cells/μL	Lymphopenia
Hematocrit	27%	30%-50%	Mild nonregenerative anemia
Reticulocyte count	14 000 cells/μL	7000-60 000 cells/μL	Normal
Albumin	2.1 g/dL	2.3-3.9 g/dL	Mild hypoalbuminemia
Total protein	5.1 g/dL	5.4-7.8 g/dL	Mild hypoproteinemia
Serum cobalamin	150 ng/L	209-1500 ng/L	Hypocobalaminemia
Intestinal wall thickness	3.4 mm	≈2.6-2.8 mm	Increased

abnormalities are noted. Total T4, FeLV, FIV, and fecal tests are negative. See ***Table***.

You suspect inflammatory bowel disease (IBD)/chronic enteropathy (ie, disease responsive to food, antibiotics, and/or anti-inflammatory therapy) or alimentary lymphoma; however, you cannot rule out uncommon bacterial, fungal, or parasitic infection.

THE CHOICE IS YOURS ...

CASE ROUTE 1

To prescribe a series of food and therapeutic trials for presumptive IBD and assess patient response, go to page 62.

CASE ROUTE 2

To pursue endoscopy to obtain a diagnosis for prognosis and targeted therapy, go to page 63.

IBD = inflammatory bowel disease

CASE ROUTE 1

You elect to try medical management with a series of food, antibiotic, and anti-inflammatory trials for presumptive IBD.

Case Progression

The patient is started on a 2-week trial of a novel protein diet. Deworming with fenbendazole is instituted, as is cobalamin therapy.

At the recheck examination, the owner reports little change in the patient's vomiting and diarrhea and that Plato does not eat the food well; she has lost another 4 oz. A hydrolyzed diet and a 2-week metronidazole trial (10 mg/kg PO q12h) are prescribed.

One week into the trial, the owner calls to report that Plato is not eating. The patient is presented again a few days later and has lost another 2 oz. Repeat blood work shows decreased albumin (1.9 g/dL; range, 2.3-3.9 g/dL) and evidence of hepatic disease, possibly early lipidosis. Relevant results include:

- ALP 325 U/L; range, 1-40 U/L
- TBIL 1 mg/dL; range, 0.1-0.6 mg/dL
- ALT 110 U/L; range, 10-100 U/L

An esophageal feeding tube is placed, and the patient is started on one-third of her resting energy requirement ($60 \times kg^{.067}$) with daily increases. Because of worsening of clinical signs, prednisolone (2 mg/kg q24h) is administered through the esophageal feeding tube; the patient also receives maropitant (2 mg/kg PO q24h) and vitamin K_1 (2.5 mg/kg SC).

In this case, it would be ideal to perform at least the urine test before therapy.

IBD = inflammatory bowel disease

Within one week, the owner calls to report the patient is eating well. Subsequent recheck finds a 4-oz weight gain, decreased vomiting, and some improvement in the stool. After 4 weeks of further therapy, albumin is nearly back to normal (2.2 g/dL; range, 2.3-3.9 g/dL). The owner reports that Plato seems to have improved significantly but is not quite back to normal.

Because the patient has not completely improved, severe IBD or lymphoma is suspected. Chlorambucil (2 mg PO q48h) is added to the regimen. At the next 4-week recheck, blood work is normal and clinical signs have resolved.

Clinical Considerations

In this clinical scenario, there are risks for presumptive treatment without a definitive diagnosis.

In the region where the patient lives, histoplasmosis is endemic. Early diagnosis of histoplasmosis is important. Histoplasmosis can often be easily detected via a urine antigen test or biopsy/aspirate of affected organs. In this case, it would be ideal to perform at least the urine test before therapy, as corticosteroid therapy could be detrimental if histoplasmosis or other infectious agents are present.

High-grade lymphoma has a much worse prognosis than histoplasmosis. Improved survival times are seen only with full CHOP (cyclophosphamide, hydroxyl doxorubicin, vincristine [Oncovin], prednisone)-type protocols; however, the response rate is poor.[2] If this patient had high-grade lymphoma, she could quickly deteriorate during empiric treatments.

Outcome

The patient stays in long-term remission on prednisolone and chlorambucil.

Your Choice's Implications

In this scenario, conservative medical trials were instituted. Treatment was ultimately successfully. However, this path led to feeding tube placement, significant costs associated with unsuccessful therapy, a likely frustrated owner, and delay of definitive therapy.

CASE ROUTE 2

Concerned about the thickened bowel and low albumin, you elect to pursue diagnostics with upper and lower endoscopy.

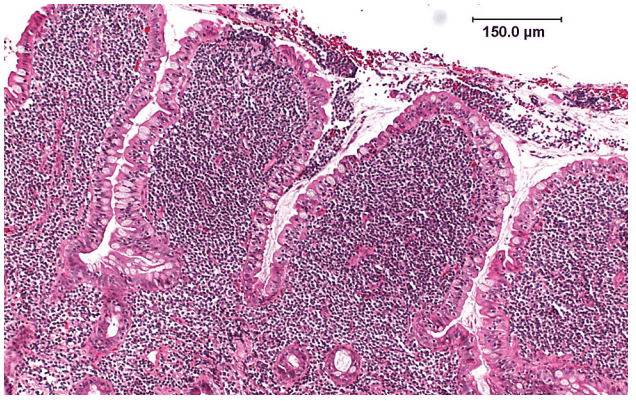
Case Progression

Upper gastroduodenoscopy and ileocolonoscopy reveal gross changes to the lumen of both the duodenum and ileum. Multiple endoscopic biopsy samples are collected from the stomach, duodenum, ileum, and colon and are submitted for histopathologic evaluation. With results pending, the patient is placed on a novel protein diet, dewormed with fenbendazole, and started on cobalamin therapy and a metronidazole trial. Histopathology results are suggestive of small-cell alimentary lymphoma in the ileum. Immunohistochemistry is performed for CD3 and CD79a to verify cells of T- and B-cell lineage.[3] T-cell lymphoma is diagnosed based on focal dense areas of stained CD3 positive lymphocytes (***Figure***).

Within 10 days of endoscopy, prednisolone (2 mg/kg q24h) and chlorambucil (2 mg PO q48h) are initiated.[4]

Clinical Considerations

Plato was presented with classic clinical signs of both IBD and lymphoma. In cats, low albumin is associated with large-cell or high-grade lymphoma in 50% to 75% of cases and is suggestive of severe disease.[5] Rapid diagnosis is important to differentiate high-grade from low-grade lymphoma and to rule out other conditions that share similar clinical signs (eg, fungal or parasitic infections).[6] The prognosis for low-grade or small-cell lymphoma is good to excellent with appropriate therapy. The reported median survival time is 520 days, and many cats live twice that long.[3]



▲ **FIGURE** Histopathology of small-cell lymphoma in the ileum

Cobalamin deficiency testing was important in this patient, as up to 78% of cats with small-cell lymphoma are hypocobalaminemic.[4] In addition, Plato only had lymphoma detected in her ileum, which is consistent with a previous study that demonstrated improved detection rates when both an upper and lower GI endoscopy were performed.[7]

Outcome

Plato is presented for recheck examination after 2 weeks. The owner reports weight gain, good appetite, and resolution of clinical signs. Serum albumin is back within normal range. The patient continues to stay in remission.

Your Choice's Implications

In this scenario, the cost of endoscopy was initially higher. Overall costs, however, were approximately the same. There was less stress on the patient and the owner as compared with case route 1. In this situation, the patient was diagnosed quickly and treated appropriately.

References

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