

Case report clinical nutrition

Maltese terrier with GDV?

Hypoalbuminaemia, Do's and don'ts

Signalment

Rakker, M, Maltese terrier, 16-06-1997, 6.9kg

History

Decreased appetite and weight loss since 2 weeks.

Diarrhea since 1 week with loss of faecal consistency and increased volume.

The dog received a "hypoallergenic diet" (rice and pork) since 10 weeks because it has skin allergy. The dog used to eat this diet well.

Since yesterday vomiting occurred.

Because the referring clinician didn't thrust this situation he decided to make an abdominal X-ray. He saw a possible dilatation of the stomach and decided to do an explorative laparotomy (suspicion of GDV). There were different calcifications on the serosa of the intestines. The liver looked normal. The stomach was filled with rice and pork meat. He emptied the stomach and closed the abdomen in a regular manner.

After the laparotomy the referring clinician performed a blood test which gave the following results:

- albumin <8
- total protein 24
- blood urea nitrogen 5.8
- creatinine 37

The patient was sent to our clinic for further investigation and treatment

Our clinical findings:

Sopor, pale and sticky mucous membranes, prolonged CRT

RR 60/min costo-abdominal (20-40)

Weak, regular pulse 114/min (110-140)

T 37.8 (38.5-39.0)

Bad elasticity of the skin and cold extremities

The dog was in a very bad body condition (BCS 2/9) and has signs of ascites.

We repeated the blood work:

- albumin 8 (26-37)
- total protein 28 (55-72)
- Potassium 2.68 (3.6-5.6)
- Sodium 142 (141-150)
- Hematocrit 0.20 (0.42-0.61)
- Liver and kidney values between reference range
- Urinalysis showed no abnormalities
- Faecal examination for intestinal parasites was negative (1 day faeces)

Problem list:

- anorexia and weight loss
- diarrhea
- hypoalbuminaemia
- hypoproteinaemia
- hypokalaemia
- ascites

Treatment:

Rakker was hospitalized at the ICU for Haesteril infusion (osmolarity) and potassium correction.

After normalizing the potassium Rakker was transferred to the ward.

Medication : Buprenorphine (temgesic) post-operative pain management, metronidazole against anaerobes and flagellates and amoxicilline-clavulanic acid (synulox) for aerobe infections which was already prescribed by the referring clinician. Rakker still had diarrhea.

Interpretation:

Because both albumin and total protein are severely decreased protein losing enteropathy is suspected. There was no suspicion of liver and kidney disease (normal blood values and urinalysis) and there was no evidence of loss of protein through the skin. Blood loss was not reported, the hematocrit was 0.20.

A common finding of PLE in dogs is Lymphangiectasia. Differential diagnoses are IBD, Lymphoma and intestinal parasites.

For the exact diagnosis we needed (full thickness) biopsies of the intestines. This was not performed because of the high anaesthetic risk.

Rakker was sent home on metronidazol (immunomodulation and intestinal parasites) and prednisolone (2mg/kg/day) for IBD.

Nutrition:

Key nutritional factors on dry matter basis:

- fat <10%
- protein >25%
- high digestibility of novel protein
- crude fiber 0.5-15%
- fat soluble vitamin supplementation
- potassium supplementation

The feeding plan is:

- Turkey and rice for the first 4 weeks
- Feeding multiple, small meals
- Extra protein from cooked egg whites
- Afterwards a commercial diet with extremely decreased lipid levels and high digestibility.

Reassessment:

Body weight and condition should be monitored weekly and serum TP and albumin once in 2 weeks.

The food should be changed with caution because of possible recurrence of the lymphangiectasia due to a higher fat content of the diet.

Prognosis is poor to moderate in case of PLE with lymphangiectasia. The prognosis for intestinal parasites is good. The prognosis for lymphoma is poor.

Follow up:

Rakker regained some weight (0.3kg in 1 week) and is eating well (BCS 3/9), the stools are still a bit soft, but the owner has no complaints about it.

Discussion:

- Rakker shouldn't have been operated because of the high anaesthetic risk.
- Despite the surgery, no biopsies were taken.
- The question is whether Rakker regains pruritis. If so, a low fat hydrolysed protein diet, supplemented with amino acids might be beneficial.
- The definitive diagnosis has not been made. The lymphangiectasia is probably a result of lymphatic obstruction caused by IBD (lymphocytic-plasmacytic enteritis) which has progressed into the lymphatics. It has been suggested that an apparently acquired lymphangiectasia develops in dogs with congenitally compromised lymphatic systems that allow leakage of lymph, to which a granulomatous reaction develops.
- There hasn't been a further workup of the anaemia (Ht 0.20) (Anaemia of chronic disease?)

Literature:

- ECVIM-CA Case 023602113 Secondary Lymphangiectasia in a dog
- WSAVA 2005 proceedings Protein-Losing Enteropathy in Dogs and cats
- J Vet Intern Med. 2008 Jul 11. Effect of sample quality on the sensitivity of endoscopic biopsy for detecting gastric and duodenal lesions in dogs and cats
- J Am Vet Med Assoc. 2001 Jul 15;219(2):197-202 Clinical, clinicopathologic, radiographic, and ultrasonographic characteristics of intestinal lymphangiectasia in 17 dogs: 17 cases (1996-1998).
- J Vet Med Sci 68(4):397-399, 2006 A case of Protein-losing Enteropathy treated with Methotrexate in a dog.