

VETERINARY MEDICAL TEACHING HOSPITAL

University of Wisconsin – School of Veterinary Medicine
 2015 Linden Drive, Madison, WI 53706-1102
 Phone: 608-263-7600, 800-386-8684; FAX: 608-265-8276

MEDICAL REC #:	123074	EXAMINATION DATE:	09/16/11	DISCHARGED:
VISIT ID:	1126064	OWNER:	Kotoyo Hoshina	
PATIENT:	Mango	ADDRESS:	5002 Sheboygan Ave	
SPECIES:	Lapine		Apt 120	
BREED:	Other Lapine (Rabbit)		Madison, WI 53705	
COLOR:	Red/White	HOME PHONE:	(608) 334-5123	
SEX:	Castrated Male	WORK PHONE:	-	
DOB:	09/12/06			
WEIGHT:	3.1 Kilograms			
REFERRING DVM:		PHONE:	-	
		FAX:	-	
		SERVICE:	Special Species	
CLINICIAN(S):	Sarah Churgin, DVM D. Keller, DVM, PhD	STUDENT(S):	Christin Reminga	

Current diagnostic impressions:

DIAGNOSIS	COMMENTS
Pancytopenia	1. non-regenerative anemia, thrombocytopenia, leukopenia, auto agglutination 2. Bone marrow revealed marked erythrocytic, granulocytic and megakaryocytic hypoplasia. Differential diagnoses: autoimmune disease, infectious, drug reaction, toxins.
Hematuria	Noted again on 9/14-15/11
Peripheral blood auto agglutination	
Intraoral lesions	1. Small buccal lesion in the gingiva between mandibular cheek teeth 409 and 410. 2. Suspected fracture of right mandibular cheek tooth 410 (the second to last tooth on the lower right arcade)

Instructions for care after discharge:

FEEDING: ☐ Usual diet ☒ Special

Instructions: Until Mango is reliably eating a large portion of his food (not just the tasty greens and fruits), he will need to receive Critical Care via syringe feeding to keep his gastrointestinal tract healthy.

EXERCISE: ☒ No restrictions ☐ Special

Instructions:

MEDICATION	SIZE/QUANTITY	INSTRUCTIONS
Enrofloxacin	20 mg/mL	START: Give 1.6 mL by mouth every 12 hours for 10 days. we may extend this prescription. This is an antibiotic. Mango has previously tolerated this medication well; however, any medication can cause an idiosyncratic reaction in an animal such as an allergic reaction, gastrointestinal upset, etc. <i>8pm = 1st dose (8a, 8p)</i>
Cyclosporine		START: Give 0.2 mL by mouth every 12 hours for 14 days. Mango will likely be on this medication long-term, but we will start with a 14-day prescription to see how he responds to it. This is an immunosuppressive medication. It is not used commonly in pet rabbits, but it is one of the safer immunosuppressive drugs we can try. <i>8am = 1st dose (8a, 8p)</i>
Combi-penicillin		Administered SQ once on 9/16, in hospital. We will likely repeat this injection but want to make sure that Mango tolerates it well.
Critical Care		START: with the head elevated upwards at a 45 degree angle, syringe feed 40 mL by mouth every 6 hours until he begins to eat more readily. Then please decrease to every 8 hours. If he is eating his normal amount, you can discontinue. Reconstitution: 1 part critical care 2 parts warm water. Make a fresh batch at each feeding.

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Ciprofloxacin 0.03%
suspension

START: give 1 drop in both eyes every
8 hours. Same 1st dose
12am = K+ dose (8am, 4pm, 12am)

Tests performed during this visit:

TEST	RESULT
CBC	<p>*Anemia, thrombocytopenia, leukopenia</p> <p>9/13/11: PCV: 13% 9/16/11: PCV: 21% (improved) HGB: 5.2 g/dL RBC: $2.26 \times 10^6/\mu\text{L}$ MCV: 63.4 fL MCH: 23.1 pg MCHC: 36.5 g/dL 9/13/11: Platelet: $12 \times 10^3/\mu\text{L}$ 9/16/11: Platelet: $36 \times 10^3/\mu\text{L}$ (improved) 9/13/11: WBC: $1.96 \times 10^3/\mu\text{L}$ 9/16/11: WBC: 2.41×10^3 (improved) Seg: 200/uL Lymph: 1,940/uL agglutination, not cleared by saline</p> <p>Thrombocytopenia is a decrease in the number of platelets, which are the cells that help form normal blood clots. If an animal does not have enough platelets, a minor bleed from a scrape or bruise can bleed profusely and can even be life-threatening. Mango's platelets were severely low on 9/13 at 12,000 (normal is $> 150,000$). This puts him at high risk for bleeding anywhere in his body.</p> <p>The leukopenia is a decrease in the number of white blood cells (specifically, in Mango's case, neutrophils). Neutrophils are the body's main defense against infections. Having a low white blood cell count puts Mango at high risk for contracting infections and being unable to fight them off.</p>
Reticulocyte	<p>*Non-regenerative anemia</p> <p>RBC: $2.26 \times 10^6/\mu\text{L}$ % Reticulocyte manual: 0.2% Absolute Reticulocyte manual: 0/uL</p> <p>Reticulocytes are early, immature red blood cells. When an animal is anemic, the body should normally respond by making lots of new reticulocytes (termed a "regenerative" response). Mango's percentage of reticulocytes is extremely low, suggesting his body is not regenerating red blood cells as it should be.</p>
Bone Marrow Aspirate	<p>*Pancytopenia: marked erythrocytic, granulocytic, and megakaryocytic hypoplasia</p> <p>Most likely diagnosis is aplastic anemia (replacement of hematopoietic tissue by adipose tissue). The lymphocytes and plasma cells represent either the residual, normal marrow elements or an immune response.</p>

Additional instructions and comments:

Mango was presented on 9/14/11 to the Special Species service, because of the CBC drawn the day prior revealed a marked anemia, thrombocytopenia and moderate leukopenia. He was seen on 9/13/11 for an oral examination, as well as a recheck from a previous GI stasis emergency last week, where they found Mango was anemic and had hematuria. An abdominal ultrasound did not reveal any abnormalities to explain the hematuria. The hematuria resolved mid-last week. Mango has been on empiric therapy with antibiotics as well as albendazole for suspected *E. cuniculi* (Mango had a positive titer in 2008). For most of last week Mango was eating and drinking fairly well at home until the last 2-3 days when the owners feel that he has had more trouble eating, has been dropping food and drinking less water.

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On presentation Mango was bright and alert. He is in good body condition and has lost a marginal amount of weight since his visit last week (today's weight 3.06 kg, last visit: 3.15 kg). Thoracic auscultation was within normal limits, and palpation of his abdomen revealed a small soft stomach. No discomfort was elicited on palpation of any other quadrant of the abdomen. No other abnormalities were noted on awake physical examination.

Because of the CBC results, a reticulocyte count was analyzed and revealed a non-regenerative anemia (see above table for an explanation of this term). A bone marrow aspirate was performed to determine why the body was not creating blood cells, which revealed a marked decrease in production of all the progenitor cell lineages. Due to the severity of his anemia and thrombocytopenia, it was recommended that Mango be admitted to the CCU for a blood transfusion and to receive overnight monitoring and treatments. Cyclosporine, an immunosuppressant, was administered both before the blood transfusion, as well as twice a day thereafter. The reasoning behind immunosuppressive therapy is that bone marrow hypoplasia can be caused by autoimmune disease, or the body turning against itself and destroying the bone marrow. The only way to treat this is with immunosuppressive medications. However, this clearly also puts Mango at an increased risk of contracting infections. It is a necessary risk that goes with this type of treatment. We are not sure whether it will be successful for Mango, but it is the best type of therapy that we can try at this point. Mango has also been placed back on the antibiotic enrofloxacin to help fight off infections.

Mango's appetite has increased a bit, but he still requires syringe feedings to reach his full energy needs. This morning, his temperature was elevated at 103.6 degrees. The IV catheter was evaluated, and we noted a large amount of inflammation surrounding the catheter site. To prevent an ascending infection, the IV catheter was removed, and an additional antibiotic (penicillin) was given on 9/16/11. As of 12 pm, Mango's temperature had not dropped and now reads 104 degrees. However, it may take time for the antibiotics to kick in and make a difference to his fever.

We repeated Mango's CBC this afternoon. While his values have not worsened, they are only mildly improved. His PCV is significantly higher at 21% compared to 13%, but this is expected because of his transfusion. The good news is that he does not appear to be destroying the donor red blood cells, which can sometimes be a problem. We would like to monitor Mango's CBC serially over time to see if his bone marrow starts to make blood cells again.

We would like for you to continue giving the antibiotic (enrofloxacin) and immunosuppressant (cyclosporine) medications at home. We want him to eat more on his own at home, before we discontinue assisted feedings. So, please give 40 mL of Critical Care with the syringe every 6 hours, until he starts to eat his hay and pellets more readily. We recommend washing your hands prior to handling Mango or even wearing gloves when handling him, to decrease the chance of passing an infection to him while he is immunocompromised.

His fever is increasing, and it is a concern of ours since he does not have an adequate number of white blood cells to fight off infection. We would like for you to bring him in tomorrow morning for a temperature reading. In the meantime, please watch for signs of deterioration at home. These signs include fever, lethargy, anorexia, diarrhea, and increased respiratory effort. If you notice any of these signs please bring him in immediately for further evaluation. Based on his temperature tomorrow morning, we can make further decisions about our treatment plan.

Overall, at this point Mango's prognosis is very guarded. This type of disease is not commonly reported in rabbits, so there is little experience in the literature to guide his treatment or tell us how he might respond. In general, immune-mediated destruction of the bone marrow and/or red blood cells in dogs and cats carries a guarded to poor prognosis. It is likely even more difficult to treat in a rabbit due to their sensitivity to certain medications, intolerance of discomfort and stress, and fragile nature. We need to be careful that we are still providing Mango with a good quality of life. If our only option for keeping him stable is to keep him in the hospital on intravenous medications, that is not a very good quality of life for him; the hospital is stressful and he is away from the people he loves. Our goal is to get Mango feeling good and back to a more normal life at home, where he is eating well and spending quality time with you. If we cannot achieve this goal in a reasonable amount of time, we recommend considering humane euthanasia due to declining quality of life. We can discuss that option at any time, but it may become recommended or even necessary if our treatments fail to help or if Mango declines further. We would be glad to discuss this option in depth with you if the time comes, and understand that it is a very personal and difficult decision.

Mango is such a sweet rabbit, and it was wonderful working with him these past several days. If you have any questions or concerns about Mango's condition or our services, please give us a call at any time.

Follow-up examination/communication with the Veterinary Medical Teaching Hospital:

- ☐ Not required
- ☒ Please set up appointment for: Recheck temperature on the following date: 9/17/11
- ☐ Please provide us with a progress report by telephone, fax, or letter on or about this date:
- ☐ We will call you with the following information:

Follow-up examination/communication with your regular veterinarian:

- ☐ Not required
- ☐ Please set up appointment for: on the following date:

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DISCHARGE INSTRUCTIONS

Faxed to veterinarian by _____ date _____

[] Do not FAX 123074

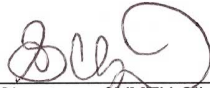
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(If you have a local veterinarian who referred you to the VMTH, we will send him/her a report of this visit)



Signature of Owner/Agent

Signature of VMTH Clinician(s)

Referring Veterinarian Report: