

7/15/2021

**Client ID:** 274763  
**Client Name:** Richard Warfel  
**Address:** 1990 S. US 301  
Sumterville, FL, 33585  
**Primary Phone #:** (352) 225-6610  
  
**Referring Vet:** Candice Humphrey  
**Phone Number:** (352) 568-7719 /  
(352) 568-1333  
**Fax Number:** (352) 568-7719 /

**Patient ID:** 445694  
**Name:** Bucky  
**Species:** Canine  
**Breed:** Retriever, Golden  
**Sex:** Male  
**Color:** English Cream  
**Markings:**  
**Birth Date:** 4/7/2021  
  
**Hospital:** Small Animal Hospital

**Finalized by:** OSW

**Diagnosis:**

**Problems:**

### Small Animal Medicine Discharge Instructions

**Discharge Date:** 7/15/2021

#### Clinical Problems & Diagnoses

**1) Elevated Liver enzymes (ALT, ALP)**

-Liver dysfunction, portosystemic shunt (Congenital), hepatocellular damage

**2) Grade III/IV Heart Murmur**

-PDA, Pulmonic Stenosis, Sub Aortic Stenosis, Mitral valve dysplasia

**3) Abnormal Gait**

-Congenital Hip Dysplasia, Ligament laxity

**4) Undescended testicles (may take up to 6 months to descend)**

-Bilateral Cryptorchidism

#### History

Bucky was purchased on 5/28/21 from a non-profit organization. He was purchased for the purpose of being part of a breeding program and to eventually be a service animal. It was noted that his testicles had not descended, at this time the breeder recommended a chiropractor, Bucky went on 6/21/21. On 6/22/21 it was noted that Bucky was lame on his rear left hind limb. He was taken to an emergency clinic, they took x-rays and said he was sore in his hips, and having "growing pains". The primary veterinarian prescribed Carprofen and recommended crate rest. It was also recommended he start joint supplements at this time. Bucky was said to have not been gaining weight like others in his litter despite eating normally and keeping food down. His appetite had decreased prior to his visit and on 7/6/21, he weighed 17lbs. The morning of 7/8/2021, the owner dewormed with safeguard and gave Carprofen because he was said to be lethargic. At lunch time he vomited in his crate, and again on the way to his primary veterinarian. Upon evaluation by his primary veterinarian on 7/8/2021, it was noted that Bucky had a gas palpated abdomen, mild muscle wasting, cryptorchidism (bilateral), left hind limb gait abnormality, grade III/IV heart murmur, and suspect congenital hip dysplasia. Diagnostic bloodwork was submitted and Bucky had elevated liver enzymes (ALT/ALP). Thoracic and abdominal radiographs were also performed and it was indicative of left atrial enlargement. He was referred to UF at that time for a cardiology and saim consultation.

#### Physical Exam Findings

On physical examination Bucky was quiet, alert and responsive. He weighed 8.3 kg and had a body condition score of 4/9. There was mild muscle wasting near the epaxials and bilaterally on hind limbs. All cardinal signs were within normal limits (Hr 130, Rr 30, Mm: pink/moist, CRT (sec.): < 2 sec, Temperature (°F): 101.7 F). He had some skin lesions near prepuce but otherwise the haircoat was unremarkable. On Cardiac auscultation Buck had a grade III/IV heart murmur, heard prominently at apex of the heart. He had normal bronchovesicular sounds in all four quadrants. On musculoskeletal examination Bucky had an abnormal gait with a mild lameness noted in the left hindlimb.

On urogenital examination both testicles had not descended, one testicle was able to be palpated in caudal abdominal region. The remainder of the physical examination was unremarkable.

## Diagnostic Testing Information

**1. Bile Acids:** Pre: 93.9 umol/L (RR 0-25 umol/L) Post: 200.4 umol/L (RR 0-25 umol/L)

### 2. Echocardiogram:

Based on the appearance of the myocardium and where flow acceleration is appreciated, a mild form of mitral dysplasia is suspected with abnormal chordal attachments causing a mechanical obstruction in the left ventricular outflow tract. However, though no discrete nodules or subvalvular ridge are appreciated, subaortic stenosis cannot be ruled out at this time given the aortoseptal angle noted. Based on the left ventricular outflow tract velocities, this is considered mild, but may continue to worsen with time.

A recheck should be scheduled when Bucky is 1 year old for a repeat echocardiogram, however, if he develops an arrhythmia, experiences any syncopal events, or increased resting respiratory rate and effort are noted, he should be evaluated sooner. Atenolol can be considered, however, this may make him more lethargic and given that the obstruction appears more physical rather than dynamic, it may help with increased velocities noted. If this is elected, a recommend starting at a 0.25 mg/kg dose PO once daily and titrating up to a final dose of 0.5 mg/kg PO twice daily over the course of a month.

**Diagnosis:** Mitral valve dysplasia vs. subaortic stenosis

**3. Orthopedic examination:** Normal range of motion in all joints. No focal pain appreciated. Mild laxity on coxofemoral joints and mild ligament laxity appreciated.

## Recommended Therapy

**Please continue to give the following medications as prescribed by your primary veterinarian.**

**1. Lactulose** 10g/15ml: Give 2.5mL by mouth every 12 hours

**2. Metronidazole** 100mg/ml: Give 0.55mL by mouth every 12 hours. This is an antibiotic that should be given with food.

**3. Levetiracetam (Keppra)** 100 mg/ml - 160 mg (20 mg/kg) or 1.6 mls to be given every 8 hours. This is an anticonvulsant medication that is well tolerated in dogs. Side effects are uncommon but can include ataxia, decreased alertness, vomiting, and diarrhea.

**4. Omeprazole 10 mg capsule.** Give one capsule once a day. This is a gastric acid suppressant. The medication is well tolerated with few side effects being noted.

## Case Interpretation and Recommendations

Today we performed a Bile Acids test on Bucky. Bile acid measurement provides useful information about the portal venous circulation and hepatic function. Bile acids are produced in the liver from cholesterol and are stored in the gall bladder. Gall bladder contraction with feeding releases bile acids into the intestine. Measurement of bile acid concentrations is a good indicator of liver function. Both the pre and post prandial blood measurements were abnormally elevated. We can confidently say that Bucky has some level of liver dysfunction at this time. Our plan moving forward with Bucky after consultation with our surgery service is to:

1. Not restrict protein for Bucky. Given that Bucky is not clinical for his liver dysfunction our plan is to feed a good quality puppy food and not restrict protein from his diet.
2. Continue the metronidazole and Lactulose
3. Add in Omeprazole and an antiseizure drug called levetiracetam (Keppra)
4. Perform a CT scan at approximately **20 - 24 weeks of age (in 6 - 8 weeks)** to look for evidence of abnormal blood flow with surgery usually being performed between 22 - 24 weeks of age.
5. After performing the CT scan consult with our soft tissue surgery service.

Additionally, Bucky was seen by our cardiology department where he was examined and an echocardiogram was performed. This common test allows us to see the heart beating and pumping blood. We can use the images from an echocardiogram to identify heart disease. His echocardiogram showed evidence of subaortic stenosis and a dysplastic mitral valve. This seems to be a congenital abnormality and cardiology recommends a recheck appointment in 12 months.

Our orthopedic surgery team examined Bucky and they noted that he has adequate flexion and extension. They did not see any laxity on the ligaments which may be a normal finding. If this is related to hip dysplasia symptoms in younger dogs may include limping, a reluctance to rise or jump, shifting of weight to the forelimbs, loss of muscle mass on the rear limbs, and hip pain. Younger dogs may have significant hip laxity. Their suggestion was that hip x-rays (PennHIP distraction method) and a special palpation method (Ortolani sign) be used to determine if Bucky has hip dysplasia. Radiographs should be performed in the next **2 weeks** as Bucky may be a candidate for a Juvenile Pubic Symphysiodesis (JPS) if he is diagnosed with Canine hip dysplasia. This is usually performed **up to 18 weeks of age**.

Please call if you wish us to prescribe Omeprazole and levetiracetam for Bucky as we can call this in to a local pharmacy for you. If you have any questions please don't hesitate to contact us.

**I have received a copy of my pet's discharges.**

7/15/2021

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**Client Signature**

**Date**

**Faculty Clinician:** Dr. Walton

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**Resident/Intern Clinician:**

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**Student:** Nicholas Malacarne

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