



## Top 20 Canine Dx pt. 2

### Five More Of Zuku's Top 20 Canine Diagnoses To Know For NAVLE® Success:

#### 6. Heart failure

##### o **Classic case:**

- Cough, exercise intolerance
- Abdominal distension
- +/- Heart murmur or arrhythmia
- Harsh lung sounds/crackles

##### o **Dx:**

- Thoracic radiography shows:
  - Heart enlargement
  - Dilated pulmonary veins
  - Interstitial to alveolar lung changes in caudodorsal lung fields
- Echocardiography shows:
  - Left atrial +/- left ventricular enlargement (causing pulmonary edema)
  - +/- Poor contractility
  - Valvular insufficiency
  - Right atrial and ventricular dilation (causing ascites)

##### o **Rx:**

- Acute:
  - Diuretics: furosemide
  - Oxygen therapy (cage or nasal cannula)
  - Positive inotrope and vasodilator: pimobendan
  - Decrease stress, mild sedation if needed
- Chronic:
  - Diuretics: furosemide
  - Positive inotrope and vasodilator: pimobendan
  - ACE-inhibitor
  - Restrict exercise and dietary salt

##### o **Pearls:**

- Prognosis is guarded

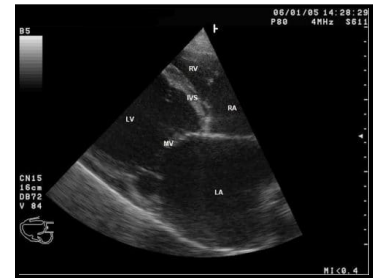
#### 7. Heartworm

##### o **Classic case:**

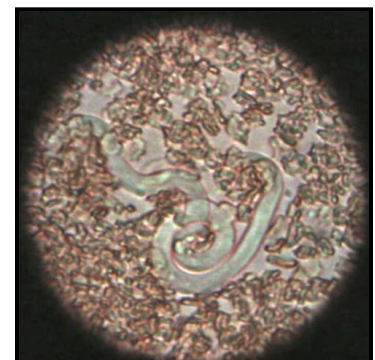
- Cough and exercise intolerance
- Abdominal distension
- Weight loss/poor body condition

##### o **Dx:**

- Annual screening with antigen SNAP test
  - Detects protein secreted by adult female worm 5 mos post-infection
  - False negatives if:
    - Antigen/antibody complex formation
    - No adult female worms (e.g., immature females or males only)



*Echocardiogram of dog with dilated cardiomyopathy showing marked left atrial and left ventricular dilation*



- Light parasite load
- Microfilaria test: recommended annually
  - Types of tests:
    - Modified Knotts
    - Filter test
    - Direct smear of anti-coagulated blood
- Thoracic radiography shows:
  - Enlarged, tortuous, +/- blunted pulmonary arteries
  - Pulmonary parenchymal disease
  - Right heart enlargement
- Echocardiography shows:
  - Pulmonary artery dilation
  - Right heart dilation
  - Visible heartworms in pulmonary artery
  - Caval syndrome: heartworms visible in right ventricle +/- right atrium

Heartworm (*Dirofilaria immitis*)  
microfilaria at 400X



*D. immitis* on a stained blood smear  
(AW image)

○ **Rx:**

- Doxycycline
  - Daily, 30 d prior to adulticide
- Heartworm prevention: macrocyclic lactones
  - Prevent new infections
  - Eliminate susceptible larvae and microfilaria (pretreat with diphenhydramine and corticosteroids if microfilaria positive)
  - Treat monthly, starting 2 mos prior to adulticide
- Adulticide: melarsomine dihydrochloride
  - 3-dose protocol: IM once, wait 1 mo, then 2 doses given 24 h apart
  - Kills 98% of heart worms
  - STRICT exercise restriction during adulticide therapy and continuing for 6-8 wks after final dose
- Corticosteroids
  - Tapering anti-inflammatory dose to control clinical signs of pulmonary thromboembolism
  - Start 1-2 mos prior to adulticide if symptomatic or microfilaria positive
- Surgical extraction of adult worms
  - Indicated for dogs with caval syndrome

○ **Pearls:**

- Prognosis:
  - Good to guarded depending on severity
  - Poor to grave for caval syndrome
- Doxycycline therapy to reduce *Wolbachia* (intracellular bacteria essential for worm survival) makes worms more susceptible to adulticide therapy
- 7% of infected dogs are negative on SNAP and positive for microfilaria

8. **Pyometra**

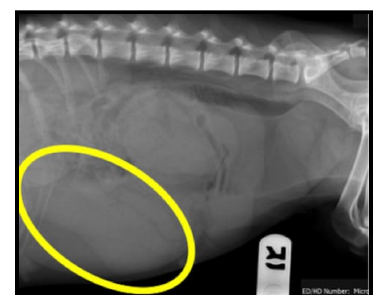
○ **Classic case:**

- Intact middle-aged female 3-4 wks past estrus
- +/- Mucoïd, purulent, or hemorrhagic vulvar discharge
- Polyuria/polydipsia
- Vomiting, anorexia, abdominal pain
- Enlarged, palpable uterus

○ **Dx:**

- Abdominal radiography: distended, tubular, enlarged, fluid-filled uterus
- Vaginal cytology: degenerative neutrophils +/- phagocytized bacteria
- Abdominal ultrasonography: enlarged fluid-filled uterus; differentiates from pregnancy

○ **Rx:**



Lateral radiograph demonstrating  
distended uterus with pyometra

- Stabilization:
  - IV fluids
  - Broad-spectrum antibiotics
  - Analgesics
- Surgical:
  - Ovariohysterectomy
  - Rx of choice for all animals not intended for breeding
- Medical:
  - Option for young breeding animals
  - Referral recommended
- **Pearls:**
  - Prognosis: guarded to good if uterus is intact
  - Rule out pyometra in any systemically ill intact female

## 9. Flea allergy dermatitis (FAD)

- **Classic case:**
  - Acute onset of moderate to severe pruritus
  - More common in warmer seasons but can be year round
  - Excessive self-grooming and hair loss, especially rear half of body
  - +/- Visible live fleas
- **Dx:**
  - History and physical exam
  - Flea comb to find fleas/flea dirt
  - Positive response to flea eradication
- **Rx:**
  - Acute:
    - Tapering dose of corticosteroids for pruritus
    - Topical/oral flea adulticide
  - Chronic:
    - Ongoing use of oral/topical flea adulticide
    - Oral monthly flea development inhibitors (lufenuron)
    - Environmental control: frequent vacuuming, removal of outdoor organic debris
- **Pearls:**
  - Prognosis is good with long-term management
  - 15% of dogs do not have evidence of fleas



*Flea allergy dermatitis*

## 10. Lameness overview: hip dysplasia, panosteitis, osteochondritis dissecans (OCD), hypertrophic osteodystrophy (HOD), Legge-Perthes disease

- **Classic case:**
  - Hip dysplasia: "bunny hopping" gait, lameness, difficulty rising, positive Ortolani sign (hip laxity)
  - Panosteitis, HOD, OCD: young, medium to giant breeds, more common in males, acute lameness, fever
    - Panosteitis: long bone pain
    - HOD: swollen and warm distal limb, metaphyseal pain
    - OCD: joint effusion, decreased range of motion
  - Legge-Perthes disease (avascular necrosis of femoral head): 3-12-mo-old small or toy breeds, pelvic limb lameness
- **Dx:** Radiography
  - Hip dysplasia:
    - Shallow acetabulum
    - Flattening of femoral head
    - < 50% of femoral head covered by acetabular rim
    - Thickened femoral neck
  - Panosteitis: multiple long bones have increased medullary opacity, periosteal new bone



*Hip dysplasia: VD radiograph with right luxation of hip and thickening of both femoral necks*

- HOD: double physeal line
- OCD: (can use CT)
  - Flattening of subchondral bone, joint mouse, joint effusion
  - Always image both limbs
- Legge-Perthes disease: loss of bone opacity at femoral epiphysis, moth-eaten appearance of femoral neck and head
- **Rx:**
  - Hip dysplasia:
    - Surgical: triple pelvic osteotomy, femoral head ostectomy, total hip replacement
    - Medical: NSAIDs, weight loss, joint supplements
  - Panosteitis, HOD: analgesics
  - OCD: surgical debridement or medical Rx with joint supplements and analgesics
  - Legge-Perthes disease: surgical femoral head ostectomy or total hip replacement, analgesics
- **Pearls:**
  - Hip dysplasia: PennHIP method is more accurate for Dx at an earlier age than OFA method (see bodacious links below)
  - Panosteitis, HOD: prognosis is excellent but flare-ups may occur, repeat radiography may be necessary to diagnose
  - OCD: prevent by avoiding excessive food and calcium and vitamin D supplements
  - Legge-Perthes disease: prognosis with surgery is good to excellent

Images courtesy Dr. Laura Cousins (heartworm microfilaria, pyometra radiograph, hip dysplasia radiograph), [Kalumet](#) (echocardiogram), and [Caroldermoid](#) (FAD).