



## Top 20 Canine Conditions Part 2



Dive into the next 5 of the top 20 canine diagnoses.

### 6. Heart failure

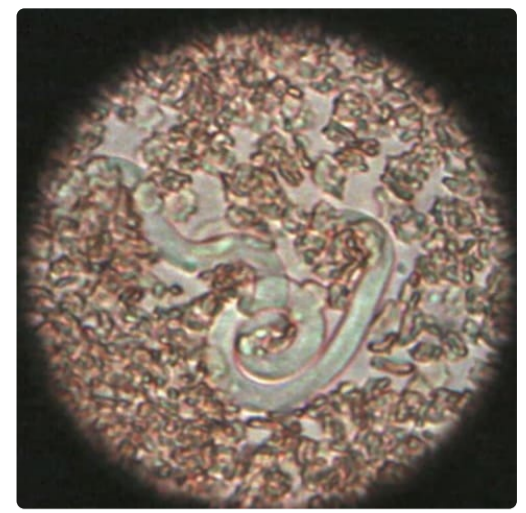
- **Classic case:**
  - Cough, exercise intolerance
  - Abdominal distension
  - +/- Heart murmur or arrhythmia
  - Harsh lung sounds/crackles
- **Dx:**
  - Thoracic radiography shows:
    - Heart enlargement
    - Dilated pulmonary veins
    - Interstitial to alveolar lung changes in caudodorsal lung fields
  - Echocardiography shows:
    - Left atrial +/- left ventricular enlargement (causing pulmonary edema)
    - +/- Poor contractility
    - Valvular insufficiency
    - Right atrial and ventricular dilation (causing ascites)
- **Tx:**
  - 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
- **Pearls:**
  - Prognosis is guarded



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

### 7. Heartworm

- **Classic case:**
  - Cough and exercise intolerance
  - Abdominal distension
  - Weight loss/poor body condition
- **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)
      - 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

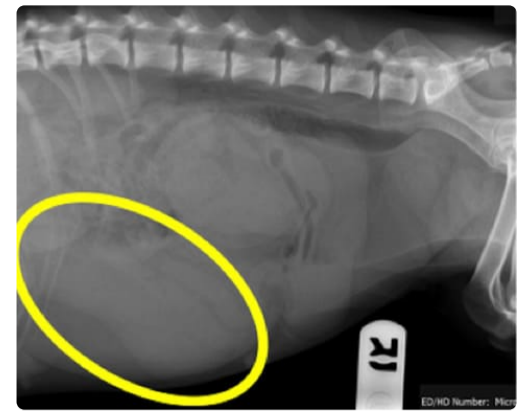


*D. immitis* on a stained blood  
smear (AW image)

- **Tx:**
  - 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
  - +/- Mucoid, 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
- **Tx:**
  - Stabilization:
    - IV fluids
    - Broad-spectrum antibiotics
    - Analgesics
  - Surgical:
    - Ovariohysterectomy is Tx 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



*Lateral radiograph demonstrating distended uterus with pyometra*

## 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
- **Tx:**
  - 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](#), [osteochondrosis 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- to 12-mo-old small or toy breeds, pelvic limb lameness

○ **Dx:** Radiography

- Hip dysplasia:
  - Shallow acetabulum
  - Flattening of femoral head
  - Over 50% of femoral head covered by acetabular rim
  - Thickened femoral neck
- Panosteitis: multiple long bones have increased medullary opacity, periosteal new bone
- 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

○ **Tx:**

- 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 Tx 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
- 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



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

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

Canine