Thoracic Radiography: Respiratory

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Pulmonary Infiltrates

- Causes:
  - Edema
    - Cardiogenic
    - Noncardiogenic
  - Pneumonia
  - LSA
  - Pneumonitis
  - Hemorrhage, Contusions
  - Volume loss (atelectasis)
  - PTE - Pulmonary Thromboembolism
  - PIE - Pulmonary Infiltrates w/ eosinophelia
  - Etc...
Pulmonary Infiltrates

- Mainly alveolar and interstitial patterns

- Atelectasis vs. Consolidation

- Location
  - Cranioventral v. Caudodorsal
  - Focal v. Diffuse
  - Bilateral v. Unilateral
Alveolar

- Air bronchograms
- Cannot visualize vessels adjacent to the bronchus
- Lobar sign
  - Sharp demarcation between normal and abnormal lung lobes
Alveolar
Alveolar

- Atelectasis
  - Loss of gas volume
- Consolidation
  - Replace air with soft tissue opaque material
    - Blood
    - Pus
    - Water
    - Neoplasia
Interstitial
Consolidation
Atelectasis = decrease volume
Interstitial

- Increased opacity
- Vessels are "hazy"
  - Still visible but not well demarcated
- Most over-read pulmonary pattern
  - Underexposed
  - Obese
  - Expiratory
Radiographic Real Estate
(location, location, location)

- **Cranioventral**
  - Pneumonia
  - Hemorrhage, Contusions
  - Torsion
  - Neoplasia/Fungal

- **Caudodorsal/Perihilar**
  - Cardiogenic edema
  - Noncardiogenic edema
  - Viral/Hemotogenous Pneumonia
  - Inflammation, vasculitis, PIE, etc...
  - Neoplasia/Fungal
Cranioventral Infiltrates
Cranoventral Infiltrates

- Pneumonia
  - Bronchopneumonia
  - Aspiration pneumonia
- Hemorrhage/Contusions
- Torsion (left cranial, right middle)
- Neoplasia/Fungal

Exceptions for cranoventral cardiogenic edema
- Canine Dilated Cardiomyopathy
- Feline Left-sided Heart Failure
  - Cats don’t follow rules, even in heart failure
Lung Lobe Torsion

- Lobar Consolidation
- Vesicular Gas Pattern
- Sharply Tapered Bronchus
- Abnormal Location of Bronchus
- Pleural Effusion
Neoplasia
Caudodorsal Infiltrates

- Cardiogenic vs. Noncardiogenic
  - Heart size
  - Pulmonary venous congestion
  - Age
  - Clinical presentation
Left-sided Congestive Heart Failure
Noncardiogenic Edema

- Electrocution
- Post-Ictal
- Asphyxia (strangulation, near drowning)
- Smoke Inhalation
- Acute Lung injury (ALI)
  - Severe = Acute Respiratory Distress Syndrome
Adult cat in respiratory distress
Response to Lasix®
Focal
Focal Masses

- Primary dDX for solitary pulmonary mass is NEOPLASIA- especially in caudal lung lobes
- dDX
  - Neoplasia
  - Cyst
  - Hematoma
  - Abscess
  - Granuloma