DISEASES OF BLOOD VESSELS

Degenerative Diseases

VPM 222

Cardiovascular Pathology
Diseases in Animals

- **Dog**
  - **Atherosclerosis**
    - Lipid accumulation occurs in the intima or media of muscular arteries
    - Secondary to hypercholesterolemia usually due to
      - Hypothyroidism
      - Diabetes mellitus
Diseases in Animals

Cow

- Intimal mineralization
  - Johne's disease
    - Aortic arch
  - Vitamin D toxicoses
  - Vitamin D analog poisoning
Inflammatory Diseases

Definitions:

- **Periarteritis**
  - Inflammation of the adventitia
- **Polyarteritis** –
  - Inflammation of many arteries
- **Phlebitis**
  - Inflammation of a vein
- **Vasculitis** –
  - Inflammation of vessels
    - arteries and veins
- **Endoarteritis**
  - Inflammation of intima
Inflammatory Vascular Disease

Viral Causes

Equine Viral Arteritis
- Polyarteritis
  - media and adventitia
- Widespread petechiae
- Generalized Edema

• Malignant Catarrhal Fever (MCF)
- Cattle
- Polyarteritis and periarteritis
Inflammatory Vascular Disease

Viral Causes

• **Equine Infectious Anemia**
  – Polyarteritis and periarteritis

• **Bluetongue**
  – Sheep

• **Feline Infectious Peritonitis**
  – Pyogranulomatous vasculitis

• **Aleutian disease**
  – Mink

• **Hog Cholera**
  – Pigs
Inflammatory Vascular Disease

Bacterial Causes - Vasculiti

- *Salmonella sp*
- *Histophilus somni*
  - (TEM)
- *E coli*
- *Erysipelothrix rhusiopathiae*
Inflammatory Vascular Disease
Parasitic Causes

- **Strongylus vulgaris** in the horse
  - Fourth stage larval forms
  - Live in intestinal arteries
    - Causes intense focal inflammatory reaction in the walls of the larger arteries
    - Aneurysmal dilation
    - Thrombosis
    - Infarction distal to involved site
  - Thromboembolic colic of horses
Inflammatory Vascular Disease
Parasitic Causes

- **Dirofilaria immitis**
  - Adult worms live in pulmonary arteries of dogs
  - Microfilaria are found throughout circulation
  - Lesions
    - Villous pulmonary endoarteritis
    - Medial sclerosis and hypertrophy
    - Obstruction and narrowing of the lumen
      - May lead to right heart failure
Inflammatory Vascular Disease
Causes

- **Fungi**
  - Not common
  - Fungi disseminate via vasculature
    - Mycotic rumenitis
  - “Love vessels”
    - eg. guttural pouch mycosis
Inflammatory Vascular Disease

Causes

- **Immune Mediated Vascular Disease**
  - Systemic lupus erythematosus
  - Rheumatoid Arthritis
  - Polyarteritis nodosa
  - Staph hypersensitivity
Omphalophlebitis
Miscellaneous Vascular Disease

• Definition
  – Inflammation of the umbilical arteries and vein

• Lesions
  – Inflammation of the umbilical stump, umbilical arteries, hepatic abscesses, peritonitis, arthritis, and septicemia

http://w3.vet.cornell.edu/nst/nst.asp?Fun=Image&imgID=20678
NEOPLASMS OF THE CARDIOVASCULAR SYSTEM

Primary

• Hemangiosarcoma
  – Synonyms
    • Hemangioendotheliosarcoma
    • Angioendotheliosarcoma
  – Location
    • Right atrium
      – German Shepherd
      – Often seen metastasis to lung
    • Spleen
    • Can occur anywhere

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NEOPLASMS OF THE CARDIOVASCULAR SYSTEM

Primary

• Hemangiosarcoma
NEOPLASMS OF THE CARDIOVASCULAR SYSTEM

Primary

• Hemangioma
  – Synonyms
    • Hemangioendothelioma
    • Angioendothelioma
  – Benign neoplasm of blood vessels
NEOPLASMS OF THE CARDIOVASCULAR SYSTEM

Primary

- Heart Base Tumor
  - Synonyms
    - Chemodectoma
    - Aortic body tumor
  - Incidence
    - Brachycephalic dog breeds
      - Boxer, Boston Terriers
    - Rare in cat
  - Arises from the chemoreceptor cells in the adventitia of the aorta, pulmonary artery or base of heart. Ectopic thyroid tumors are also reported at this site.
NEOPLASMS OF THE CARDIOVASCULAR SYSTEM
Secondary

- **Lymphosarcoma**
  - Most frequently observed secondary tumor, especially in cattle and cats

- **Hemangiopericytoma**
  - Neoplasia of the pericytes