Fundus VET 433A

1. Know the 3 major fundic layers and the anatomical relationships between these layers.
    a. Retina, (retinal pigment epithelium RPE) Choroid, Sclera
2. Be able to recognize variations of normal in the appearance of the fundus.
    a. Refer to ppt for pictures of normal fundus
3. Be able to recognize the 4 retinal vascular patterns from a photographic image and know which species demonstrate these patterns.
    a. Holangiotic – most mammals
    b. Merangiotic – rabbit
    c. Paurangiotic – horse
    d. Anangiotic (birds, reptiles)
4. Be able to recognize the general signs of fundic disease: tapetal hyperreflectivity, retinal vascular attenuation, multifocal chorioretinal cellular infiltrates, multifocal hyperreflectivity and pigmentation, hemorrhage, retinal separation, and pale or swollen optic disk.
    a. Tapetal hyperreflectivity- typically indicative of more chronic and inactive changes. There is decreased retinal thickness which makes the light travel a shorter path
    b. Multifocal chorioretinal cellular infiltrates- active chorioretinitis
        i. Changes in color (white pale yellow, greyish) = inflammatory cells or neoplasia
    c. Multifocal hyperreflexivity and pigmentation – Melanin migration

d. Hemorrhage – trauma, senile, hypertension, thrombocytopenia, coagulopathy, hyperviscosity
e. Retinal separation – chorioretinits
f. Pale/swollen optic disc – depigmentation (non-tapetal fundus)
    i. Immune-mediated disease process
    ii. Uveodermatologic syndrome PRA

5. Know the underlying cause, common signs and course, diagnostic approach, and treatment options for Progressive Retinal Atrophy, Sudden Acquired Retinal Degeneration Syndrome, chorioretinitis, and optic neuritis.

Diseases

Chorioretinitis

Retina and the choroid are involved

Signs of systemic disease

Differentiate between active vs chronic

If there are fundic findings, it is active

-Cellular infiltrates, hyporreflective areas, indistinct borders, retinal separation/detachment, hemorrhage

Causes

-Infectious

-Systemic hypertension

-Autoimmune disease

-Neoplasia (lymphoma)

-Coagulopathies

Additional Pertinent Information

In a normal fundus you are looking through multiple layers

Vitreous- tamponade, transparent

Retina: Tapetal area, non-tapetum area, thickness, vessels

Home of photoreceptors, generates neurological impulse response to light

Blood retinal barrier (BRB)

Optic disc: Axons of RGCs – Impulse to brain

Choroid (uvea)- Nutrition/oxygen, removes waste, BRB choriocapillaris

What needs to be evaluated in a fundus exam?

1. All in the same plane (difficulty focusing on all of the retina at once)
2. Changes in tapetal reflectivity
3. Changes in color
4. Changes in the vascular appearance
5. Optic nerve head (optic disc)