

ECVP/ESVP Summer School in Veterinary Pathology

Summer School 2010 – Eye Case 1

Tissue from a dog

- The section of distorted globe has findings in all ocular structures including blood in all 3 chambers of the eye (hemophthalmos) [1]: the anterior chamber (hyphema), posterior chamber, and the vitreal/vitreous chamber.
- Corneal findings include central absence (ulceration) of epithelium [2], marked diffuse stromal infiltration of neutrophils (keratitis), [3] diffuse separation of collagen fibers (edema) [4], and moderate infiltration of the peripheral stroma by vessels (neovascularization) accompanied by fibroplasia [5].
- The superficial corneal stroma in the area of the ulcer is compact and hyalinized (possibly due to dessication). There is accumulation of degenerate neutrophils with deposits of fibrin.
- Fibrous tissue extends into the anterior chamber from along the anterior surface of the iris (preiridal fibrovascular membrane) [6] and forms a bridge across the pupil. [7]
- Fibrous tissue from along the anterior surface of the iris (preiridal fibrovascular membrane) is causing distortion of the iris. Aggregates of lymphocytes and some plasma cells are present in the iridal stroma. [8]
- The anterior lens capsule is ruptured. [9] The anterior lens capsule is thick (aging change).
- The lenticular cortex is liquefied (cataract) and partially intermixed with blood. [10]
- Lens epithelial cells extend along the posterior lens capsule. [11]
- Fibrovascular tissue extends along the posterior lens capsule (cyclitic membrane). [12]
- Basophilic spheres of variable sizes are present in the collapsed vitreous body (asteroid hyalosis). [13]
- In addition to blood, the vitreous chamber contains a coagulum of fibrin, some foamy macrophages (many with yellow to brown blood pigment) and a few neutrophils. There is early fibrovascular organization of the hemorrhage in the vitreous cavity. [14]
- The retina is not identifiable, but appears to be detached. [15]
- Vessels within the choroid had thickened and hyalinized walls (arteriolosclerosis) and some appear to contain fibrin thrombi. [16]
- The conjunctiva and episclera contain congested vessels, areas of hemorrhage and perivascular cuffing by lymphocytes and plasma cells. [17]

Morphologic Diagnosis(es): Ulcerative neutrophilic keratitis with neovascularization edema and fibroplasia, hyphema, vitreal hemorrhage (hemophthalmos), preiridal fibrovascular membrane, cyclitic membrane, lens capsule rupture, cataract, asteroid



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hyalosis, retinal detachment, arterial medial hypertrophy/hyalinization (arteriolosclerosis) [18-19]

Underlying condition: Hypertension [20]