

# ECVP/ESVP Summer School in Veterinary Pathology

Summer School 2015 – Eye

## Case MI 3

### DOG

#### HD: eye

Section of eye. Normal uveal and internal chambers architecture is completely effaced (0.5) by a severe, diffuse, inflammatory infiltration (0.5) that focally extends transmurally to the scleral stroma (1).

Corneal epithelium is diffusely attenuated and extensively ulcerated (0.5). Underlying stroma is diffusely edematous and infiltrated by numerous neutrophils. In deeper stromal layers numerous hyperemic blood vessels (neovascularization 0.5), and fibroblasts proliferation are recognizable. Focally, peripheral superficial and medium corneal stroma is intensely hypereosinophilic, homogenous, paucicellular (necrosis/sequestrum) 0.5.

Focally, Descemet membrane rupture is visible (1), with haemorrhage and proliferation of irregular fibrous tissue (0.5) between the two opposite ends of Descemet.

Anterior chamber is filled and distended by abundant fibrinous exudation admixed with numerous red blood cells (hyphema) (1). Filtration angle is closed and collapsed (0.5).

Mild, multifocal lymphocytic and plasmacytic infiltration is recognizable within iris stroma (0.5).

Irregular fibrovascular membranes line posterior iris epithelium, span posterior chamber (cyclitic membranes) and encase the lens (1). Where membranes adhere to uveal epithelium, the latter is detached with large posterior iris or ciliary body epithelial cysts formation (0.5).

Infiltrating these fibrovascular membranes and filling posterior and vitreal chamber a diffuse neutrophilic (0.5) and lymphoplasmacytic (0.5) infiltration, admixed with fibrin exudation, is recognizable.

Within inflammatory infiltration and abutting posterior lens capsule, a large aggregate of thin, variably length filamentous bacteria (0.5), admixed with numerous, 1 micrometer, round bacteria (cocci) is visible (0.5). Lens posterior capsule is focally interrupted (0.5) with coiling of opposite tips and neutrophils with degenerated nucleus (karyolysis) are detectable (purulent exudation) within the lens (lens rupture/phakoclastic uveitis 0.5). A fragment of a birefringent multicellular foreign body, with honeycomb-like features, consistent with plant material, is also detectable within the lens capsule shell (0.5).

Lens fibers are no longer recognizable. Lens epithelial cells are large, vacuolated, multi-layered, focally migrated under the equatorial capsule area (cataract/LECs migration). (1)

Choroid is diffusely expanded by edema, fibrin and diffuse neutrophilic and lymphoplasmacytic infiltration (choroiditis 0.5).

Purulent inflammatory cell infiltration, associated with large recent hemorrhages, focally extends to the sclera (0.5), dissecting and substituting normal scleral stroma and reaching bulbar conjunctival corion (0.5), that is hyperemic and edematous (0.5). Multifocally, surrounding this area, fibrinoid necrosis of sclera vessels is also detectable (0.5).

[in some slides: retinal detachment, retinal atrophy and retinitis]



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Additional findings: fibrosis, regenerative changes, atrophy and interstitial lymphoplasmacytic and, to a lesser extent, neutrophilic infiltration affect orbital muscles. (0.5)

**MD:** severe, acute fibrinous and purulent panophthalmitis (1) with lens rupture (phakoclastic uveitis 0.5) and intralesionali bacteria (0.5) and foreign body vegetal material (0.5)

**Possible Pathogenesis:** foreign body (FB) penetration through conjunctiva → scleral perforation → FB penetration within the eye + bacterial injection → lens rupture and lens sepsis.

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Histologic Description Mi3	Points
Style	1
Normal uveal and internal chambers architecture is completely effaced (0.5) by a severe, diffuse, inflammatory infiltration (0.5) that focally extends transmurally to the scleral stroma (1).	2
<b>Eye</b>	
Corneal epithelium is diffusely attenuated and extensively ulcerated (0.5).	0.5
In deeper stromal layers numerous hyperemic blood vessels (neovascularization 0.5), and fibroblasts proliferation are recognizable.	0.5
Focally, peripheral superficial and medium corneal stroma is intensely hypereosinophilic, homogenous, paucicellular (necrosis/sequestrum) 0.5.	0.5
Descemet membrane rupture	0.5
Haemorrhage and proliferation of irregular fibrous tissue (0.5) between the two opposite ends of Descemet	0.5
Anterior chamber is filled and distended by abundant fibrinous exudation (0.5) admixed with numerous red blood cells (hyphema) (0.5).	1
Filtration angle is closed and collapsed (0.5).	0.5
Mild, multifocal lymphocytic and plasmacytic infiltration is recognizable within iris stroma (0.5).	0.5
Fibrovascular membranes (0.5) line posterior iris epithelium, span posterior chamber (cyclitic membranes) (0.5) and encase the lens.	1
Uveal epithelium detached with posterior iris or ciliary body epithelial cysts (0.5).	0.5
Filamentous bacteria (0.5), admixed with 1 micrometer, round bacteria (cocci) (0.5).	1
Lens posterior capsule is interrupted (0.5) with coiling of opposite tips and neutrophils with degenerated nucleus (karyolysis) are detectable (purulent exudation) (0.5) within the lens (lens rupture/phakoclastic uveitis 0.5).	1.5
A fragment of a birefringent multicellular foreign body (0.5), with honeycomb-like features, consistent with plant material (0.5), is also detectable within the lens capsule shell.	1
Lens epithelial cells are large, vacuolated, multi-layered, focally migrated under the equatorial capsule area (cataract/LECs migration). (1)	1
Choroid is diffusely expanded by edema, fibrin and diffuse neutrophilic and lymphoplasmacytic infiltration (choroiditis 0.5).	0.5
Purulent inflammatory cell infiltration, associated with large recent hemorrhages, focally extends to the sclera (0.5), dissecting and substituting normal scleral stroma and reaching bulbar conjunctival corion (0.5)	1
Multifocal fibrinoid necrosis of sclera vessels (0.5).	0.5



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Additional findings: fibrosis, regenerative changes, atrophy and interstitial lymphoplasmacytic and, to a lesser extent, neutrophilic infiltration affect orbital muscles. (0.5)	0.5
<b>MD:</b> severe, acute fibrinous and purulent panophthalmitis (1) with lens rupture (0.5) (phakoclastic uveitis 0.5) and intralesional bacteria (0.5) and foreign body vegetal material (0.5)	3
<b>Pathogenesis:</b> foreign body (FB) penetration through conjunctiva → scleral perforation → FB penetration within the eye + bacterial injection → lens rupture and lens sepsis.	1
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