WSC 2025-2026
Conference 5, Case 1
Tissue from a dog.

MICROSCOPIC DESCRIPTION: Heart, ventricular wall **(1pt.)**: Multifocally and transmurally, **(1pt.)** cardiac myocytes are separated, surrounded, and occasionally replaced by large numbers of lymphocytes **(1pt.)** plasma cells **(1pt.)** and macrophages **(1pt.)** and fewer neutrophils. In infiltrated areas of myocardium, cardiac myocytes are shrunken, angular with pyknosis or karyolysis **(1pt.)**, loss of cross striations and a hypereosinophilic often fragmented sarcoplasm **(1pt.)** (necrosis) **(1pt.)** Rarely, necrotic myofibers are mineralized. There is mild multifocal edema as well as small areas of hemorrhage. **(1pt.)** Multifocally, individual myofibers contain variably sized, intracytoplasmic **(1pt.)** oval to elongate pseudocysts (up to 60 x 125um) **(1pt.)**, with numerous 2-4 um round to oval protozoal amastigotes **(1pt.)** with a distinct basophilic nucleus and a rod-shaped kinetoplast **(1pt.)** oriented parallel to the nucleus. The endocardium and epicardium have similar, but less severe, changes.

MORPHOLOGIC DIAGNOSIS: Heart: Pancarditis **(1pt.)**, lymphoplasmacytic and histiocytic, multifocal to coalescing, marked, with numerous intramyocytic protozoal amastigotes. **(1pt.)**

CAUSE: Trypanosoma cruzi **(3pt.)**

O/C: **(1pt.)**

WSC 2025-2026
Conference 5, Case 2
Tissue from a cynomolgus macaque.

MICROSCOPIC DESCRIPTION: (Right) ventricle and atrioventricular valve **(1pt)**: Attached to, expanding, and deforming the atrioventricular valve **(2pt)**, and extending into the aortic lumen **(1pt)** is a large fibrin thrombus **(2pt)** which contains large enmeshed and coalescing colonies of mixed 2-3um bacilli **(1pt)** and 1-2um cocci **(1pt)**, admixed with moderate numbers of necrotic neutrophils **(2pt)** entrapped erythrocytes, and abundant cellular debris **(1pt)**. The thrombus is multifocally attached to the valve leaflet, resulting in segmental loss of the lining endothelium, and marked distortion and expansion of the valve leaflet **(1pt)** by variably mature granulation tissue **(1pt)**. The granulation tissue contains sheets of fibroblasts **(1pt)** developing capillaries and large numbers of heterophils admixed with cellular debris. **(1pt)** A similar but far less severe change is present along ventricular endocardium **(1pt)** in apposition to the valve leaflet, with loss of endocardium and extension of granulation tissue into the underlying myocardium where it separate and surrounds atrophic myofibers **(1p**t).

Lung (separate slide, not present on the WSC website so not graded): Two sections of lung are submitted for examination. In one section, there is a large septic thrombus within the multiple branches of the pulmonary artery. The thrombus is composed of abundant polymerized fibrin containing large numbers of viable and necrotic neutrophils, cellular debris, and large numbers of 2-3um bacilli. Thrombi are attached to and efface the wall of the pulmonary artery and neutrophils extend through the wall and into the surrounding alveolar parenchyma where they fill alveolar spaces and efface alveolar septa (septal necrosis). Within alveoli, they are admixed with varying combinations and concentrations of alveolar macrophages, fibrin, edema, small amounts of hemorrhage and siderophages, and cellular debris. In less affected areas, alveolar septa are expanded by edema, congestion, and low to moderate numbers of neutrophils and hypertrophic septal macrophages. There is multifocalTypeII pneumocyte. The pleura and multifocally, the interlobular septa are expanded by variable combinations and concentrations of viable and degenerate neutrophils, macrophages, lymphocytes and plasma cells admixed with edema and hypertrophic mesothelium

MORPHOLOGIC DIAGNOSIS: Heart, right ventricle and AV valve: Valvulitis **(1pt)** fibrinosuppurative **(1pt),** chronic, focally extensive, severe, with granulation tissue formation and numerous colonies of coccobacilli **(1pt)**.

2. Lung: Pneumonia, necrotizing and suppurative, embolic, chronic, multifocal to coalescing, severee, ewith septic arterial thrombi and suppurative pleuritis.

O/C: **(1pt)**

WSC 2025-2026
Conference 5, Case 3.
Tissue from a dog.

MICROSCOPIC DESCRIPTION: Eye: Focally expanding the sclera **(1pt.)** on both sides of the globe and unilaterally extending into the adjacent orbital skeletal muscle, there are numerous cross-sections of larval nematodes **(1pt.)**, which range up to 150um in diameter with a ridged cuticle **(1pt.)**, a pseudocoelom, low atrophic polymyarian-coelomyarian **(1pt.)** musculature which is multifocally replaced by hypodermis, multiple cross sections of an eccentrically placed small intestine, and cross sections of an esophagus. The larva are multifocally surrounded by moderate to large numbers of epithelioid macrophages **(1pt.)** admixed with fewer multinucleated foreign body-type macrophages **(1pt.)** and moderate amounts of mature collagen, throughout which are scattered plump fibroblasts, lymphocytes, and plasma cells. **(1pt.)** In areas where the nematode larvae extend intp the skeletal muscle, myofibers are shrunken and hypereosinophilic (atrophy). The corneal epithelium is mildly hyperplastic and hyperpigmentedand there is squamous metaplasia, with stromal vacularization, edema, and infiltration by low to moderate numbers of neutrophils. The limbal conjunctival epithelium is moderately hyperplastic and hyperpigmented and the stroma is expanded by moderate numbers of lymphocytes **(1pt.)**, plasma cells, and fewer macrophages (often containing pigment) and neutrophils **(1pt.)** There is a layer continuous iris stroma spanning the iridocorneal angle with loss of the uveoscleral trabecular meshwork within the ciliary cleft. **(1pt.)** The lens epithelium extends posteriorly beyond the lateral poles (posterior lens epithelial migration). Multifocally, individual lens epithelial cells deep to the superficial lens epithelium are markedly hypertrophied with abundant eosinophilic, microvacuolated cytoplasm and retained nuclei (bladder cells). **(1pt.)** At one edge of the optic nerve, there is a focal retinal scar in which there is diffuse thinning of the retina with disorganization and loss of all three nuclear and plexiform layers. There is disorganization of the nerve fibers of the optic nerve head with collapse of pial traeculae. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: 1. Globe: Scleritis **(1pt.)** and orbital rhabdomyositis, granulomatous **(1pt.)** multifocal, marked with numerous larval filarid nematodes. **(1pt.)**
2. Eye, lens: Cataract.
3. Retina: Scar, focal.

Cause: *Onchocerca lupi* **(2pt.)**

O/C: **(1pt.)**

WSC 2025-2026
Conference 5, Case 4.
Tissue from a cat.

MICROSCOPIC DESCRIPTION: Eye: There are histologic changes in all segments of the globe. The lens is ruptured **(1pt.)** with distraction of the posterior lens capsule and approximately 40% of the posterior aspect of the lens.. Lens material is surrounded by numerous viable and degenerate neutrophils **(1pt.)**, few macrophages **(1pt.)**, and abundant fibrin **(1pt.)**, hemorrhage, and proteinaceous fluid which fill the posterior chamber and extend into the anterior chamber. **(1pt.)** There ae colonies of coccobacilli within the lens material. Within the lens remnants, lens protein is replaced by numerous variably sized, brightly eosinophilic, hyalinized, round Morgagnian globules. **(1pt.)** The ciliary body and iris are diffusely expanded by moderate numbers of neutrophils, macrophages, lymphocytes, plasma cells, fibrin, edema, hemorrhage, and congestion **(1pt.)**, and the drainage angle is effaced **(1pt.)** by adhesions of the anterior iris to the cornea along its length (anterior synechia) **(1pt.)**. Descemet's membrane is multifocally ruptured. The anterior and posterior iris surfaces are covered by fibrovascular tissue (pre-iridal fibrovascular membrane) **(1pt.)** containing numerous neutrophils. In the vitreous chamber, neutrophils and fibrin surround, infiltrate, and efface layers of the detached coiled and atrophic retina **(1pt.)**, expand the subretinal space, and infiltrate the choroid. **(1pt.)** Within the retina, there is severe atrophy characterized by: loss of normal architecture, extensive loss of the ganglion and inner plexiform nerve fibers and nuclei as well as rods and cones, and a decrease in nuclei and disorganization of the outer nuclear layer. **(1pt.)** The retinal pigment epithelial layer is covered by multiple layers of neutrophils, fewer macrophages, and fibrin. The sclera is thinned, and there is edema, hemorrhage, and periorbital fat **(1pt.)** and the adjacent atrophic skeletal muscle fibers are infiltrated by mature collagen containing plump fibroblasts, few neutrophils, edema and hemorrhage. **(1pt.)**

MORPHOLOGIC DIAGNOSIS**:** Eye: Endophthalmitis **(1pt.)**, fibrinosuppurative **(1pt.)**, diffuse, severe, with lens rupture **(1pt.)**, anterior synechia, pre- and post-iridal fibrovascular membranes, retinal detachment and atrophy, and colonies of coccobacilli. **(1pt.)**

NAME THE CONDITION: Phacoclastic uveitis **(1pt.)**