

WSC 2019-2020 Conference 20

Case 1. Tissue from a cat.

MICROSCOPIC DESCRIPTION: Lung: Diffusely, the walls of small and medium-sized veins **(1pt)** are markedly expanded and often effaced **(1pt)** by an inflammatory infiltrate that often totally obscures arteriolar remnants. The endothelial lining in many arteries is segmentally to totally lost **(1pt)**, and the lumen often contains non-occlusive fibrin thrombi **(1pt)**. The elastic lamina of these arteries is lost, and the wall, particularly the outer segments are **(1pt)** expanded 3-4 times normal **(1pt)** by large numbers of epithelioid macrophages **(1pt)** admixed with fewer neutrophils, lymphocytes, plasma cells, rare multinucleated foreign body-type macrophages, brightly eosinophilic extruded protein **(1pt)**, hemorrhage, and abundant cellular debris, which extends into and effaces the surrounding alveolar parenchyma. At the periphery of these inflammatory foci, alveoli are filled by a similar population of inflammatory cells, edema, fibrin, and hemorrhage. Diffusely, pulmonary alveoli are flooded with abundant bright pink protein-rich edema fluid **(1pt)**, admixed with hemorrhage, moderate numbers of alveolar macrophages **(1pt)** (occasionally in aggregates), neutrophils, and small amounts of cellular debris. Alveolar walls are expanded by congestion, edema, activated intravascular macrophages and increased numbers of circulating cells, often neutrophils, as well as the occasional circulating megakaryocyte. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Lung: Phlebitis **(1pt)**, lymphohistiocytic **(1pt)**, diffuse, severe, with, fibrinoid necrosis **(1pt)**, diffuse moderate interstitial pneumonia **(1pt)** and marked alveolar and interstitial edema.. **(4pt)**

CAUSE: Mutated feline coronavirus **(3pt)**

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

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Case 2. Tissue from a sheep.

MICROSCOPIC DESCRIPTION: Kidney: Multifocally, the walls of arcuate, lobular and interlobar arteries **(1pt.)** are markedly thickened **(1pt.)** and transmurally infiltrated by large numbers of macrophages **(1pt.)** and lymphocytes **(1pt.)**, with fewer neutrophils **(1pt.)** and rare plasma cells, admixed with variable amounts of a brightly eosinophilic protein, **(1pt.)** hemorrhage, edema, and cellular debris **(1pt.)**. There is multifocal loss of endothelium, and segmental effacement of the tunica intima, with infiltration of smooth muscle cells, haphazardly arrayed and separated by moderate amounts of collagen. The cellular infiltrate largely effaces the mural architecture, and smooth muscle cells of the tunica media are often hyaline, fragmented, and occasionally necrotic **(1pt.)** and also large amounts of fibrillar collagen. . The cellular infiltrate extends into the surrounding tunica adventitia **(1pt.)** and adjacent renal interstitium **(1pt.)**, where inflammatory cells are admixed with numerous activated fibroblasts **(1pt.)**, proliferating new vessels, and collagen. Moderate numbers of macrophages, lymphocytes, and plasma cells extend into and expand the adjacent renal interstitium, effacing renal tubules. Adjacent tubules are occasionally dilated, lined by variable degenerate, necrotic, and/or attenuated epithelium, and their lumina contain variable combinations of protein, degenerate neutrophils, sloughed necrotic epithelium, and cellular debris **(1pt.)**. Occasional glomeruli are mildly hypercellular with low numbers of neutrophils and activated macrophages within the mesangium.

MORPHOLOGIC DIAGNOSIS: Kidney, arteries: Arteritis **(1pt.)**, lymphohistiocytic **(1pt.)**, multifocal, chronic, severe, with moderate perivascular lymphohistiocytic nephritis **(1pt.)**.

CAUSE: Ovine herpesvirus-2 **(3pt.)**

NAME THE DISEASE: Malignant catarrhal fever **(1pt.)**

O/C: (1pt)

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Case 3. Tissue from an ox.

MICROSCOPIC DESCRIPTION: Lung: Diffusely, the walls of pulmonary arterioles **(1pt.)** are markedly expanded up to ten times normal thickness **(1pt.)** by a variably eccentric **(1pt.)** proliferation of smooth muscle cells **(1pt.)** and fibroblasts **(1pt.)** which are widely separated by a homogenous blue ground substance **(1pt.)** and fibrillar collagen **(1pt.)** which diminishes luminal diameter, effaces the tunica intima **(1pt.)**, and markedly expands the tunica media **(1pt.)**. At the periphery of large arteries, vasa vasorum are undergo similar change. There are mural infiltrates of low numbers of neutrophils, macrophages and lymphocytes throughout the arteriolar wall and within the adventitia. **(1pt.)** The walls of larger pulmonary veins are expanded by fibrous connective tissue. **(1pt.)** Multifocally there are areas of septal congestion and necrosis **(1pt.)**, with intra-alveolar hemorrhage, polymerized fibrin **(1pt.)**, and edema. There is marked edema and emphysema of interlobular septa and the overlying pleura. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Lung, pulmonary arterioles: Smooth muscle hypertrophy and hyperplasia **(1pt.)**, diffuse, severe, with mural fibroplasia **(1pt.)**, venous fibroplasia **(1pt.)**, and multifocal alveolar edema.

NAME THE CONDITION: Altitude disease ("brisket disease"), (prolonged hypoxemia or chronic pulmonary hypertension OK) **(2pt.)**

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

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Case 4. Tissue from a pig.

MICROSCOPIC DESCRIPTION: Haired skin: There is diffuse vascular necrosis **(1pt.)** of small vessels in the superficial and to a lesser extent, deep dermis which is characterized by loss of endothelium **(1pt.)** and hyalinization of the vessel wall **(1pt.)**, and variable combinations of cellular debris **(1pt.)**, extruded protein **(1pt.)** and hemorrhage, and infiltrating neutrophils **(1pt.)** and histiocytes **(1pt.)** within vessel walls. There is moderate edema, hemorrhage, and polymerized fibrin surrounding vessels and extending outward into the dermis **(1pt.)**, as well as moderate numbers of neutrophils, macrophages, and fewer lymphocytes. **(1pt.)** Affected vessels often contain luminal fibrin thrombi. **(2pt.)** There is extensive hemorrhage and necrosis within the dermal pegs **(1pt.)** and multifocal areas of full thickness necrosis of the overlying epidermis **(2pt.)** which is characterized by a loss of stain affinity and diffuse pyknosis of keratinocyte nuclei. **(1pt.)** There is mild overlying orthokeratotic hyperkeratosis.

MORPHOLOGIC DIAGNOSIS: Haired skin: Vasculitis **(1pt.)**, necrotizing **(1pt.)**, diffuse, severe, with multifocal dermal and epidermal necrosis **(1pt.)**.

CAUSE: Porcine circovirus-2

CAUSE: Porcine circovirus-2 **(2pt.)**

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