

WSC 2020-2021

Conference 15, Case 1.

Tissue from a horse.

MICROSCOPIC DESCRIPTION: Kidney: Randomly scattered within the cortex and extending into the medulla **(1pt)**, are low numbers of random **(1pt)** multifocal to coalescing foci of inflammation **(1pt)** that center on and efface glomeruli **(1pt)**, extend into adjacent interstitium and surround and replace adjacent tubules **(1pt)**. Inflammatory foci are admixed with numerous degenerate and rare viable neutrophils **(1pt)** and rare macrophages admixed with abundant necrotic debris. Throughout the section, low numbers of glomerular capillaries are segmentally expanded by fibrin thrombi **(1pt)** and bacterial emboli **(1pt)** composed of large colonies of basophilic 2x3um coccobacilli. **(1pt)**. Affected tufts also contain few neutrophils admixed with small amounts of cellular debris. **(1pt)** In areas adjacent to suppurative inflammation, tubular epithelium is markedly swollen with numerous vacuoles (degeneration) **(1pt)** or brightly eosinophilic, shrunken and fragmented, with pyknotic nuclei (necrotic) **(1pt)**. Necrotic tubules often contain sloughed epithelial cells admixed with degenerate neutrophils and cellular debris **(1pt)**. Other tubules often contain abundant protein within their lumen, or rarely hemorrhage. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Kidney: Nephritis, suppurative **(1pt)**, embolic **(1pt)**, with mild fibrinosuppurative glomerulitis and rare large colonies of bacilli **(1pt)**

CAUSE: *Actinobacillus equuli* **(1pt)**

O/C – **(1pt.)**

WSC 2020-2021
Conference 15, Case 2.

Tissue from a pig.

MICROSCOPIC DESCRIPTION: Kidney: Diffusely, there are changes at all levels of the nephron. Fetal glomeruli are present in the subcapsular cortex. Glomeruli are most severely affected and exhibit one or more of the following changes: hypersegmentation **(1pt)**, markedly increased mesangial cellularity composed primarily of mesangial cells **(1pt)** but also moderate numbers of neutrophils **(1pt)**; expansion of glomerular capillaries walls **(1pt)** by variable combinations and concentrations of basement membrane, fibrin **(1pt)**, transmigrating neutrophils, cellular debris, as well as hypertrophic endothelial cell nuclei. There is occasional glomerular **(1pt)** with focal exudation of fibrin and collagen deposition (crescent formation) **(1pt)**. Bowman's space is often filled with fibrin, neutrophils and cellular debris. **(1pt)** There is hypertrophy of both visceral and parietal epithelium, thickening of Bowman's capsule, and periglomerular fibrosis. **(1pt)** Tubules exhibit one or more of the following changes: ectasia with an attenuated epithelium lining, filling of lumina with proteinaceous or cellular casts **(1pt)** and occasionally, moderate numbers of neutrophils **(1pt)**; tubular epithelial swelling with abundant cleared cytoplasm (degeneration) or numerous intracytoplasmic protein droplets **(1pt)**; epithelial fragmentation, pyknosis, and sloughing (necrosis) **(1pt)**; and regeneration **(1pt)** with increased cytoplasmic basophilia, piling up of cells, and rare mitotic figures. In areas of tubular damage, the interstitium **(1pt)** is expanded by edema, proliferating fibroblasts interspersed among wisps of immature collagen, and occasionally, small numbers of neutrophils and/or lymphocytes. Arterioles including afferent arterioles, intralobular arteries, and to a lesser extent arcuate vessels are surrounded by several lamellae of immature collagen. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Kidney: Glomerulonephritis, proliferative **(1pt)** and crescentic **(1pt)**, diffuse, severe with crescent formation **(1pt)**, tubular degeneration, necrosis, and regeneration, tubular protein droplets **(1pt)** cellular casts, and edema.

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

WSC 2020-2021

Conference 15, Case 3.

Tissue from a horse.

MICROSCOPIC DESCRIPTION: Kidney: Diffusely, there are changes at all levels of the nephron. Glomeruli are most severely affected and exhibit one or more of the following changes: global enlargement, often filling Bowman's space, **(1pt)**, markedly increased mesangial cellularity**(1pt)** composed primarily of mesangial cells **(1pt)** neutrophils **(1pt)**, and edema. Numerous capillary loops contain occlusive fibrin thrombi **(1pt)**, and capillary walls are expanded by variable combinations and concentrations of fibrin **(1pt)**, granular eosinophilic and basophilic cellular debris **(1pt)**, hemorrhage, transmigrating neutrophils **(1pt)**, as well as hypertrophic endothelial cell nuclei. In few glomeruli, entire segments of the tuft are replaced by fibrin, small amounts of hemorrhage and cellular debris. **(1pt)**. In others, Bowman's space is filled with similar material. Occasional glomeruli are composed of hypocellular, hyalinized glomerular tufts (glomerulosclerosis). **(1pt)** Tubules exhibit one or more of the following changes: tubular epithelial swelling with abundant cleared cytoplasm or numerous intracytoplasmic eosinophilic granules (degeneration) **(1pt)**; individualized to segmental epithelial pyknosis, and sloughing (necrosis) **(1pt)**; luminal proteinosis **(1pt)**, hemoglobin casts **(1pt)**, and small numbers of intraluminal neutrophils **(1pt)**. There is necrosis and loss of numerous tubules within the medulla. **(1pt)** In areas of cortical tubular damage, the interstitium is expanded by edema, and small numbers of neutrophils. **(1pt)** There are widely scattered aggregates of small numbers of lymphocytes and plasma cells randomly throughout the interstitium, **(1pt)** as well as within the adventitia of arcuate vessels. There are asteroid bodies within the endothelium of arcuate vessels. Edema is prominent within the medullary interstitium and renal pelvis.

MORPHOLOGIC DIAGNOSIS: Kidney: Glomerulonephritis, proliferative **(1pt)**, diffuse, severe, with superimposed thrombotic microangiopathy **(1pt)**, tubular degeneration and necrosis, proteinosis and red cell casts. **(1pt)**,

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

WSC 2020-2021

Conference 15, Case 4.

Tissue from a dog.

MICROSCOPIC DESCRIPTION: Urinary bladder **(1pt)**: Expanding the submucosa of 90% of the section and infiltrating the underlying tunica muscularis **(1pt)** is an unencapsulated, poorly circumscribed, infiltrative, exophytic, multilobular, polypoid neoplasm **(1pt)** composed of short interlacing streams and bundles **(1pt)** of neoplastic spindle cells separated by scant eosinophilic fibrillar stroma. **(1pt)** Neoplastic cells are spindle-shaped **(2pt)**, with indistinct cell borders and moderate amounts of eosinophilic fibrillar cytoplasm. In areas of low cellularity, larger “strap” cells characterized by abundant fibrillar eosinophilic cytoplasm and a cluster of two or more centrally located nuclei are present **(1pt.)** Neoplastic cell nuclei are oval to elongate, have coarsely stippled chromatin and 1-2 prominent nucleoli **(1pt)**. The mitotic rate exceeds 40 per 2.37mm² field **(1pt)**. Numerous neoplastic cells are apoptotic. **(1pt)** There are areas of necrosis and hemorrhage scattered throughout the neoplasm, primary in exophytic areas. **(1pt)** The neoplastic cells extend into the underlying smooth muscle wall, surrounding and separating smooth muscle bundles. **(1pt)** In areas of muscle infiltration, the stroma increases between cells from fine to moderate. Bundles of smooth muscle contained within the neoplasm are variably sized and hypereosinophilic (atrophy). **(1pt)**

MORPHOLOGIC DIAGNOSIS: Urinary bladder: Botryoid rhabdomyosarcoma. **(4pt)**

NAME A POSSIBLE SEQUELA: Hypertrophic pulmonary osteopathy (metaphyseal osteopathy) (2pt)

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