

WSC 2017-2018  
Conference 25 Case 1.  
Tissue from a dog.

**MICROSCOPIC DESCRIPTION:** Kidney: Arising within the medulla, effacing preexistent tissue, is a well-encapsulated, well demarcated, vaguely nodular densely cellular infiltrative neoplasm. **(1pt.)** Neoplastic cells are arranged in long streams and bundles **(1pt.)** separated by a fine collagenous matrix **(1pt.)**. Neoplastic cells often palisade, forming tubules **(1pt.)** throughout the neoplasm. Neoplastic tubules are well formed with basally oriented nuclei and luminal projection of moderate amounts of finely granular eosinophilic cytoplasm. **(1pt.)** Rarely, a papillary projection of epithelial cells projects into the lumen of neoplastic tubules (glomerular like structure) **(1pt.)**. Neoplastic cells are spindled with a small amount of the finely fibrillar eosinophilic cytoplasm. **(1pt.)** Nuclei are elongated fusiform, with moderately clumped chromatin and one to 2 small basophilic nucleoli. **(1pt.)** Mitotic figures average 20 per 10 high powered fields (2.37 mm<sup>2</sup>). **(1pt.)** There are variably sized areas of necrosis and hemorrhage throughout the neoplasm. **(1pt.)** The periphery, the neoplasm is bounded by a thick capsule of dense collagen throughout which are scattered moderate numbers of fibrous sites which measures up to 500 μ in diameter. **(1pt.)** Within the overlying cortex, there is diffuse and severe loss of tubules and replacement by mature collagen. **(1pt.)** Remaining tubules exhibit one or more of the following atrophic and/or degenerative changes: shrinkage, marked vacuolization of tubular epithelial cells, accumulation of a granular brownish pigment within tubular epithelium (lipofuscin), and expanded and tortuous basement membranes. The interstitium is markedly expanded by mature collagen. **(1pt.)** Remaining glomeruli are compressed in a transverse fashion. The overlying renal capsule is markedly expanded up to 750μ, edematous, with numerous congested vessels and dilated lymphatics and multiple foci of hemorrhage. **(1pt.)**

**MORPHOLOGIC DIAGNOSES:** Kidney: Nephroblastoma. **(5pt.)**

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

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Conference 25 Case 2.

Tissue from a macaque.

MICROSCOPIC DESCRIPTION: Placenta **(1pt.)**: Within the chorionic trophoblast layer (chorionic plate), subjacent to the chorionic villi, **(1pt.)** there is infiltration of large numbers of viable and degenerating neutrophils **(1pt.)** which form a dense band and are admixed with abundant cellular debris **(1pt.)**, and in areas, layers of polymerized fibrin and hemorrhage. **(1pt.)** Neutrophils infiltrate the underlying amnion in moderate numbers. **(1pt.)** Throughout the chorionic plate, trophoblasts are multifocally vacuolated, swollen (degenerate) and often have pyknotic or karyorrhectic nuclei (necrosis) **(1pt.)** and many trophoblasts contain intact neutrophils within their cytoplasm. Multifocally, the walls of chorionic vessels are expanded by moderate amounts of neutrophils, extruded protein and cellular debris (vasculitis) **(2pt.)**. Other chorionic vessels either contain fibrin thrombi **(1pt.)**, or are effaced by fibrin and hemorrhage. Large numbers of 1-2  $\mu$  cocci **(1pt.)** often arranged in chains **(1pt.)**, form a dense band within the deep edematous **(1pt.)** layers of the chorioamnionic plate and are also present in smaller numbers within the infiltrate in the more superficial aspects. There is multifocal mineralization throughout the chorion, largely at the base of the chorionic villi (incidental finding) **(1pt.)**.

MORPHOLOGIC DIAGNOSIS: Placenta: Chorioamnionitis and deciduitis **(1pt.)**, neutrophilic and necrotizing, **(1pt.)**, subacute multifocal to coalescing, severe, with fibrinoid vasculitis **(1pt.)** and numerous cocci **(1pt.)**.

CAUSE: *Streptococcus sp.* **(2pt.)**

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

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Conference 25, Case 3.

Tissue from an ox.

**MICROSCOPIC DESCRIPTION:** Rumen **(1pt.)**: There is diffuse severe suppurative inflammation transmurally **(1pt.)** throughout both sections. Necrosis extends throughout the mucosal epithelium and there is variable degrees of architectural loss. There is extensive microabscess **(1pt.)** formation within superficial layers of the mucosal epithelium. Neutrophils transmigrate the mucosal epithelium singly and in small aggregates; mucosal epithelial cells are often swollen by abundant intracellular edema. In areas of extensive necrosis and architectural loss, colonies of large bacilli and numerous 3-5µm yeasts (*Candida* sp.) are enmeshed within the necrotic debris and sloughed keratin layers. Superficial keratin is often sloughed into the renal luminal lumen, where is admixed with innumerable neutrophils, cellular debris, fibrin, and rare hemorrhage. Mucosal epithelium is often lifted off the underlying basement membrane. Innumerable neutrophils admixed with cellular debris infiltrate the underlying submucosa **(1pt.)**. The walls of submucosal vessels are often expanded by extruded protein, neutrophils, and cellular debris (vasculitis) **(1pt.)** and often contain fibrinocellular thromb **(1pt.)**. Innumerable viable and degenerating neutrophils infiltrate the longitudinal and circular layers of skeletal muscle **(1pt.)** within the muscularis; myofibers exhibit one or more of the following changes: hypereosinophilia, shrinkage, fragmentation, vacuolation (degeneration) as well as nuclear pyknosis or karyorrhexis (necrosis). **(1pt.)** Vascular changes within this layer are similar to those previously described. Lymphatics in both the submucosa and muscularis are markedly dilated, and contain small amounts of polymerized fibrin as well as intact neutrophils. The serosa **(1pt.)** is markedly expanded by edema, infiltrating neutrophils, and abundant polymerized fibrin; vascular changes as previously described are present in this layer as well. Multifocally the serosa is expanded by granulation tissue **(1pt.)** as well. In one section granulation tissue and collagen as well as numerous neutrophils and fewer macrophages lymphocytes and plasma cells expand the serosa and extend into and incorporate the underlying mesentery. **(1pt.)** Diffusely throughout the section, primarily within the mucosal epithelium as well as the underlying submucosa, there are randomly scattered 10-15 µ wide fungal hyphae **(1pt.)** with non-parallel walls nondichotomous branching and a 2 micron eosinophilic hyalin cell wall. **(1pt.)**

**MORPHOLOGIC DIAGNOSES:** Rumen: Rumenitis, necrotizing **(1pt.)**, transmural **(1pt.)**, diffuse, severe with necrotizing vasculitis and numerous fungal hyphae **(1pt.)**.

**CAUSE:** Any of the Zygometes **(3pt.)**

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

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Conference 25 Case 4.

Tissue from a mouse.

**MICROSCOPIC DESCRIPTION:** Lung: Approximately 60% **(1pt.)** of the section of lung is effaced by multifocal to coalescing areas of lytic **(1pt.)** necrosis **(1pt.)** which efface the pulmonary architecture. Areas of necrosis measure up to 500  $\mu$  in diameter and composed largely of eosinophilic and granular basophilic cellular debris **(1pt.)** throughout which is scattered moderate numbers of viable and degenerating neutrophils **(1pt.)** between areas of necrosis there are remnant areas distorted pulmonary architecture which, like the lung adjacent to the areas of necrosis, contain numerous epithelioid **(1pt.)** and multinucleated foreign body type giant cell macrophages **(1pt.)** admixed with moderate numbers of neutrophils **(1pt.)** and fewer lymphocytes **(1pt.)**. Within surviving areas of pulmonary tissue, alveolar septa are either replaced by mature collagen **(1pt.)**, are markedly expanded by macrophages as previously described. Macrophages often contain numerous spicules **(1pt.)** of brightly eosinophilic protein within their cytoplasm. Similar changes are present within the adjacent remaining pulmonary architecture in which alveoli are filled with spiculated macrophages and multinucleated giant cells and alveolar septa are expanded by similar cells. The subpleural pulmonary architecture is largely replaced adjacent to the area of necrosis where 400  $\mu$  wide band of fibrous connective tissue **(1pt.)** containing moderate numbers of neutrophils. The pleura itself is expanded by variable combinations and concentrations of edema **(1pt.)** and proliferating fibroblasts and neutrophils and pleural vessels are markedly congested. The pleural multifocally contains plexi of proliferating congested vessels, which occasionally are surrounded by aggregates of moderate numbers of lymphocytes. **(1pt.)**

**MORPHOLOGIC DIAGNOSIS:** 1. Lung: Pneumonia, necrosuppurative **(1pt.)**, multifocal to coalescing, severe.

2. Lung: Pneumonia, granulomatous, (histiocytic OK) **(1pt.)**, interstitial, diffuse, severe, with numerous intracytoplasmic eosinophilic crystals **(1pt.)**.

**NAME THE CONDITION:** Eosinophilic macrophage pneumonia. **(2pt.)**

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