

WSC 2023-2024

Conference 13, Case 1

Tissue from a cynomolgus macaque.

MICROSCOPIC DESCRIPTION: Nasal cavity and maxilla **(1pt)**: Effacing nasal turbinates and infiltrating the maxilla, and adjacent skeletal muscle and fibroadipose tissue **(1pt)** there is an unencapsulated, well-demarcated, infiltrative **(1pt)**, densely cellular neoplasm **(1pt)**. The neoplasm is composed of polygonal to spindle cells **(1pt)** arranged in nests, packets **(1pt)** and occasional short streams **(1pt)** on a fine fibrovascular stroma. **(1pt)** Neoplastic cells have indistinct cell borders, and a small amount of a homogenous eosinophilic cytoplasm **(1pt)**. Nuclei are irregularly round to oval with finely stippled chromatin and 1-2 small basophilic nucleoli. **(1pt)** Anisocytosis and anisokaryosis are moderate **(1pt)**. Mitotic figures average 3-5 per 400X field **(1pt)**. There are numerous apoptotic cells throughout the mass. **(1pt)** There is extensive resorption of the nasal bone and turbinates of the paranasal sinus **(1pt)**, and remaining bone is extensively remodeled with scalloped edges. **(1pt)** .

MORPHOLOGIC DIAGNOSIS: Nasal cavity and maxilla: Malignant neoplasm **(4pt)**.

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

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Conference 13, Case 2

Tissue from a rhesus macaque.

MICROSCOPIC DESCRIPTION: Bile duct **(1pt.)**: There is marked thickening of the common bile duct and loss of normal architecture. There is segmental loss of lining epithelium. **(1pt.)** Within this area, innumerable necrotic and viable neutrophils infiltrate the underlying markedly edematous lamina propria **(1pt.)**, where they are admixed with fewer macrophages, lymphocytes, plasma cells, scattered hemorrhage and abundant cellular debris. **(1pt.)** Remaining mucosal glands are often ectatic and filled with neutrophils and cellular debris **(1pt.)** There is granulation tissue with numerous fibroblasts oriented parallel to the mucosal surface within this area which extends downward into the inflamed muscular wall. **(1pt.)** Similar but less severe inflammatory changes are present within the non-ulcerated areas of the mucosa. **(1pt.)** Within the mucosa, there are foci in which the nuclei of mucosal and glandular epithelium **(1pt.)** are markedly expanded by a basophilic karyomegalic viral inclusion. **(1pt.)** The smooth muscle of the bile duct is infiltrated by plump fibroblasts **(1pt.)** and inflammatory as previously described, and there is fibrosis of this layer and expansion of the serosa by fibroblasts and collagen. The lumen of the bile duct contains mucin, fibrin, and viable and degenerate neutrophils. Within one partially effaced gland, there are numerous round 3-4 um apicomplexan schizonts **(1pt.)**. There is mild hyperplasia of the epithelium within affected bile ducts.

Gallbladder: The lumen of the gallbladder is filled with abundant eosinophilic proteinaceous material which contain aggregates of mineral embedded in a basophilic matrix. **(1pt.)** In other areas, small aggregates of neutrophils and cellular debris within the lumen. The lamina propria of the mucosa is moderately edematous.

Liver: Intimately attached to the microvillar border of biliary epithelium within the lobular bile ducts **(1pt.)**, There are numerous round 3-4 um apicomplexan schizonts **(1pt.)**. There is mild lymphoplasmacytic inflammation and fibrosis around bile ducts within portal areas.

MORPHOLOGIC DIAGNOSIS: 1. Common bile duct: Cholelithiasis **(1pt.)**, necrotizing **(1pt.)**, circumferential, chronic, diffuse, marked with intraepithelial karyomegalic viral inclusions. **(1pt.)**

2. Liver, bile ducts: Cholangitis **(1pt.)**, lymphoplasmacytic and eosinophilic, chronic, multifocal, mild with intracellular and extracytoplasmic apicomplexan schizonts **(1pt.)** and mild biliary hyperplasia.

3. Gallbladder: Cholecystitis, neutrophilic, diffuse, mild.

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

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Conference 13, Case 3.

Tissue from a rat.

MICROSCOPIC DESCRIPTION: Heart: The right ventricle **(1pt.)** is occluded by a large septic fibrin thrombus **(1pt.)**. Scattered throughout the thrombus are large colonies of cocci **(1pt.)** and at the periphery, adjacent to the endocardium, aggregates of large numbers of necrotic and fewer viable neutrophils **(1pt.)** admixed with cellular debris. The endocardium and the AV valve are effaced by plump fibrocytes and small amounts of mature collagen **(1pt.)** which is infiltrated by low to moderate numbers of neutrophils and fewer lymphocytes and macrophages **(1pt.)**, all of which extend into the underlying cardiac muscle. **(1pt.)** Multifocally within these areas there is fragmentation, atrophy, and loss of cardiomyocytes. **(1pt.)**

Lung: Multiple sections of lung are submitted and all are similar. One or more pulmonary arteries **(1pt.)** in each section contain septic fibrin thrombi as previously described. **(1pt.)** In affected arteries, endothelial cells are segmentally to circumferentially lost and the arterial wall is segmentally effaced **(1pt.)** by infiltrating neutrophils and cellular debris. **(1pt.)** Cocci are often present in these thrombi as well. There are often large numbers of neutrophils in the adventitia which extend into the adjacent peribronchiolar connective tissue and occasionally into the adjacent alveolar parenchyma. **(1pt.)** Large numbers of neutrophils are present diffusely within alveolar capillaries **(1pt.)** which are further expanded by hypertrophy of pulmonary interstitial macrophages. The periarteriolar interstitium is edematous around uninvolved arterioles.

MORPHOLOGIC DIAGNOSIS: 1. Heart, right ventricle: Endocarditis, myocarditis, and valvulitis **(1pt.)**, chronic-active and suppurative, with ventricular septic thrombus **(1pt.)** with numerous cocci.

2. Lung, pulmonary arteries: Arteritis, necrotizing, **(1pt.)** multifocal, severe, with septic thrombi. **(1pt.)**

CAUSE: *Streptococcus sp. or Staphylococcus aureus.* **(1pt.)**

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

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Conference 13, Case 4.
Tissue from a rat.

MICROSCOPIC DESCRIPTION: Kidney: One section of kidney is presented for examination. The renal pelvis is markedly dilated. **(1pt.)** There are segmental area of ulceration within the pelvis, and there is marked suppurative inflammation wi adjacent to this area and extending into the rest of the pelvis. **(1pt.)** There are rays of ectatic tubules extending into the cortex **(1pt.)** which culminate in variably sized foci of inflammation ranging up to 1.5mm in diameter within the cortex.. **(1pt.)** Within them are numerous ectatic tubules **(1pt.)** which are filled with viable and necrotic neutrophils **(1pt.)** admixed with cellular debris. **(1pt.)** In tubules filled with eisonohilic protein and few neutrophils, colinices of bacilli are present in the lumina. Neutrophils transigrate the epithelium of affected tubules **(1pt.)**, and there is segmental necrosis of tubular epithelium **(1pt.)** as well as attentation of epithelium **(1pt.)** in ectatic tubules. In foci of inflammation, the interstitium is expanded by large numbers of neutrophils **(1pt.)** and fewer macrophages, **(1pt.)** lymphocytes, **(1pt.)** and small numbers of fibroblasts **(1pt.)** separated by small amounts of collagen which effaces tubules in some areas. The capsular surface of the kidney is scalloped, with indentations in areas of inflammation. **(1pt.)** There is atrophy of capsular fat. **(1pt.)**

MICROSCOPIC DIAGNOSIS: Kidney: Pyelonephritis **(1pt.)** , chronic-active and suppurative, **(1pt.)** multifocal to coalescing, severe, with protein and cellular casts, intratubular bacilli, and moderate hydronephrosis. **(1pt.)**

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