WSC 2022-2023
Conference 15, Case 1
Tissue from a rat.

MICROSCOPIC DESCRIPTION: Colon: Two sections of colon are submitted for examination, and lesions are similar but vary in severity in each. There is segmental **(1pt)**, full thickness necrosis (ulceration) of the mucosa. **(1pt)** Subjacent to the ulcer, the submucosa is replaced by granulation tissue **(1pt)** containing moderate numbers of neutrophils **(1pt)** with fewer lymphocytes and plasma cells. Elsewhere along the mucosa, there is mucosal erosion and numerous ectatic colonic glands **(1pt)**. Ectatic glands contain variable combination and concentrations of necrotic epithelial cells, neutrophils, and cellular debris. (necrosis) **(1pt)** Affected glands lack goblet cells and lining epithelium ranges from markedly attenuated to hypertrophic, pluristratified, and forming papillary projections into the lumen (regeneration). **(1pt)** Peyer's patches contain markedly decreased numbers of lymphocytes admixed with cellular debris (lymphocytolysis) **(1pt)**. Submucosal lymphatics are markedly dilated, and the submucosa itself is diffusely and mildly edematous. **(1pt)**The serosa is mildly expanded by edema and mildly hypertrophic mesothelial cells. There is mild atrophy of fat in the attached mesentery.

Small intestine: Two sections of presumptive jejunum is submitted for examination. There is marked villar blunting. **(1pt)** There is multifocal loss of villar epithelium with low to moderate numbers of neutrophilis in the subjacent lamina propria. **(1pt)** Ectatic crypts contain variable combinations and concentrations of necrotic epithelial cells, neutrophils, and cellular debris (crypt abscesses). **(1pt)**There is mild crypt hyperplasia characterized by increased numbers of mitotic figures. **(1pt)** The submucosa, muscularis and serosa are normal.
There are occasional goblet cells deep within crypts.

MORPHOLOGIC DIAGNOSIS: 1. Colon: Colitis, necrotizing **(1pt)**, multifocal to coalescing with ulceration, glandular regeneration **(1pt)** and lymphocytolysis **(1pt)**.
2. Intestine: Enteritis, necrotizing **(1pt)**, segmental, moderate, with crypt abscesses and crypt hyperplasia. **(1pt)**

Most likely cause: Irradiation **(1pt)**

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

Conference 15, Case 2
Tissue from a mouse.

MICROSCOPIC DESCRIPTION**:** Liver: Three sections of liver a are submitted for examination. Diffusely, hepatic lobules are decreased in size **(2pt)** central veins and portal triads are in close proximity. Hepatic plate architecture is intact, but sinusoids are difficult to discern within the central and midzonal parts of the lobule. **(2pt)** Within portal areas, portal veins are absent **(2pt)**, and there are often multiple cross-sections of tortuous arterioles **(2pt)** Portal lymphatics are mildly dilated **(1pt)**. Sinusoids bordering portal areas are often moderately congested **(2pt)**. Sublobular lymphatics are also dilated (edema). **(1pt)** Centrilobular and midzonal hepatocytes are mildly expanded by cytoplasmic glycogen. **(1pt)** There are widely scattered aggregates of lymphocytes and rare macrophages, usually in perivascular locations. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Liver: Portal vein hypoplasia **(5pt)**, multifocal.

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

WSC 2022-2023
Conference 15, Case 3
Tissue from a dog.

MICROSCOPIC DESCRIPTION: Kidney: Approximately 50% of the kidney is effaced by a an unencapsulated, well demarcated, largely necrotic densely cellular infiltrative neoplasm. **(1pt)** The neoplasm has three distinct morphologies to the neoplastic cells – blastemal **(1pt)**, mesenchymal **(1pt)**, and epithelial **(1pt)**. The majority of the neoplastic cells are blastemal, and are arranged in short streams and bundles**(1pt)** of densely packed spindle cells. **(1pt)** Blastemal cells have indistinct cell borders and a small to moderate amount of granular amphophilic cytoplasm. **(1pt)** Nuclei are irregularly round to oval with abundant finely stippled chromatin and 1-3 basophilic nucleoli. **(1pt)** There is minimal anisokaryosis, and te motitic rate in this population is 32 per 2.37mm^2 field. **(1pt)** There are low numbers of apopotic blastemal cells. **(1pt)** Multifocally within the blastema, cells elongate and become more narrow, and are separated by moderate amounts of edematous stroma (mesenchymal cells); **(1pt)** the mitotic rate in this population is approximately 8 per 2.37mm^2 field. **(1pt)** Rarely at the periphery, condensations of cells palisade around a lumen, resembling tubules **(1pt)** (epithelial) – mitoses are rare in these differentiated cells. Within the neoplasm and at the periphery, there are thick bands of heterologous smooth muscle. **(1pt)** Approximately 50% of the neoplasm has undergone coagulative necrosis. **(1pt)** There is interstitial fibrosis **(1pt)**at the infiltrating edge of the neoplasm, with atrophy and loss and compression of tubules and glomeruli.

MORPHOLOGIC DIAGNOSES: Kidney: Nephroblastoma. **(3pt.)**

NAME AN APPROPRIATE IMMUNOHISTOCHEMICAL STAIN: WTF-1 **(1pt)**

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

WSC 2022-2023
Conference 15, Case 4.
Tissue from a rat.

MICROSCOPIC DESCRIPTION: Kidney: Multifocally within the cortex, expanding the interstitium and surrounding and separating renal tubules **(2pt)**, there are rests of nephrogenic blastemal cells. **(1pt)** Blastemal cells are arranged in short streams and bundles **(2pt)** of densely packed spindle cells. **(1pt)** Blastemal cells have indistinct cell borders and a small to moderate amount of granular amphophilic cytoplasm. **(2pt)** Nuclei are irregularly round to oval with abundant finely stippled chromatin and 1-3 basophilic nucleoli. **(2pt)** There is minimal anisokaryosis, and the mitotic rate in this population is 3 per 2.37mm^2 field. **(1pt)** Multifocally, blastemal cells differentiate into tubules **(2pt)**, initially with crowded palisading nuclei and gaining additional cytoplasm over time. **(1pt)** There are scattered apoptotic blastemal cells. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Kidney: Nephroblastematosis, multifocal. **(4pt)**.

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