WSC 2018-2019 Conference 20
Case 1. Tissue from a dog.

MICROSCOPIC DESCRIPTION: Haired skin: Effacing the dermis, extending to the overlying ulcerated epidermis, there is a solitary, nodular, unencapsulated, moderately cellular, infiltrative neoplasm. **(2pt.)** The neoplasm is composed of round **(1pt.)** cells arranged in sheets **(1pt.)** on a pre-existent fibrovascular stroma **(1pt.)**. Neoplastic cells have distinct cell borders with and a moderate amount of amphophilic to clear cytoplasm **(1pt.)**. Nuclei are irregularly round, often indented, with 2-4 small basophilic nucleoli **(1pt.)**, and there is multifocal nuclear pleomorphism **(1pt.)**. Mitoses average 1-2 per 2.37mm^2 (12/10HPF). **(1pt.)**There are numerous eosinophils **(1pt.)** throughout the neoplasm, and multifocal areas in which eosinophils cluster around brightly eosinophilic fragmented collagen fibers **(1pt.)** (collagen degradation) **(2pt.)**. Throughout the neoplasm and within the adjacent dermis, apocrine glands are dilated. **(1pt.)** The adjacent dermis is mildly dilated and the overlying mildly hyperplastic epidermis is focally extensively ulcerated.

MOROPHOLOGIC DIAGNOSIS: Haired skin: Mast cell tumor, high grade. **(5pt.)**

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

WSC 2018-2019 Conference 20
Case 2. Tissue from a horse.

MICROSCOPIC DESCRIPTION: Eyelid: Extending downward from the extensively ulcerated eyelid margin, there is an unencapsulated, poorly demarcated, moderately cellular infiltrative neoplasm. **(1pt.)** Two distinct appearances are present within the neoplasm. **(1pt.)** At the mucosal edge, neoplastic cells are arranged in discrete anastomosing cords and nests **(1pt.)** which appear to communicate with the overlying mucosa on a dense fibrous stroma **(1pt.)** throughout which are scattered moderate numbers of lymphocytes and plasma cells. Neoplastic cells have variably distinct cell borders often with visible intercellular bridges, variable amounts of eosinophilic to amphophilic cytoplasm **(1pt.)** and occasionally exhibit squamous differentiation and keratinization **(1pt.)** . Nuclei exhibit variable degrees of anisokaryosis and low-grade pleomorphism **(1pt.)** , often with prominent nucleoli. Mitoses in this population average 3-4 per 2.37mm^2. **(1pt.)** A second population abuts the deep edge of the first, and is composed of large polygonal cells ranging up to 30um **(1pt.)** in diameter arranged in sheets on a fine fibrovascular stroma. These cells also form tubules at the invasive periphery. This population has distinct cell borders with abundant clear **(1pt.)** cytoplasm which often peripheralizes a hyperchromatic nucleus **(1pt.)** . Mitoses are rare in this population. **(1pt.)** At the periphery, neoplastic clear cells with reduced amounts of clear cytoplasm often form tubules and acini. **(1pt.)** There are moderately-sized areas of necrosis **(1pt.)** scattered throughout this region of the neoplasm, and it is traversed by dense bands of collagen. There are aggregates of large numbers of lymphocytes **(1pt.)** , plasma cells, and fewer macrophages located largely at the periphery of the neoplasm, often in perivascular and perineural areas. There is ulceration **(1pt.)** of 90% of the mucocutaneous junction of the eyelid, with replacement by a serocellular crust. A dense band of lymphocytes and plasma cells **(1pt.)** , and in non-ulcerated areas, hyperplastic epidermis. At the periphery, there is deformation of elastin fibrils within the superficial dermis which give it a slightly grayeish appearance (solar elastosis).

MORPHOLOGIC DIAGNOSIS: Squamous cell carcinoma, clear cell type **(1pt.)**

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

WSC 2018-2019 Conference 20
Case 3. Tissue from a dog.

(Normal tissue is not available on this case, the mass was removed from the base of the penis).

MICROSCOPIC DESCRIPTION: Base of the penis (per contributor): Extending up to an overlying mucosal membrane **(1pt.)** there are multiple sections of an, exophytic, unencapsulated, well-demarcated, densely cellular neoplasm **(2pt.)** composed of sheets **(2pt.)** of closely-packed round cells multifocally separated by variably thick bands of fibrous connective tissue. **(1pt.)** Neoplastic cells have distinct cell borders, a moderate amount of pale eosinophilic, finely granular cytoplasm **(2pt.)**, Neoplastic cells have a central, round nucleus with coarsely-stippled chromatin and one to two prominent, magenta often centrally placed bnucleoli. **(2pt.)** The mitotic rate averages 3 per 2.37mm^2 field. **(1pt.)** There is multifocal apoptosis of single and small clusters of cells. **(1pt.)** Scattered throughout the neoplasm primarily within fibrovascular tissue in perivascular locations are moderate numbers of lymphocytes and plasma cells. **(1pt.)** There is multifocal necrosis of epithelial cells with associated hemorrhage and edema subjacent to the mucosal surface. **(2pt.)**

MORPHOLOGIC DIAGNOSIS: Base of penis (per contributor): Transmissible venereal tumor.

(4pt.)

O/C: (1pt.)

WSC 2018-2019. Conference 20
Case 4. Tissue from a dog.

(Note: Depending on the level of section, fibrocartilage from the anterior end of the os penis may be present.)

MICROSCOPIC DESCRIPTION**:** Penile urethra: Effacing the mucosa, extending both into the submucosa and partially occluding the lumen is an infiltrative and exophytic, unencapsulated, moderately cellular, poorly demarcated neoplasm. **(2pt.)** The neoplasm is composed of small nests and packets **(1pt.)** of neoplastic cells on a dense fibrous stroma. Neoplastic cells line the ulcerated urethral mucosa **(1pt.)** and infiltrate the underlying submucosa **(1pt.)** and form arborizing papillary projections **(1pt.)** on a dense fibrous stroma. **(1pt.)** Neoplastic cells vary from round to cuboidal, have indistinct cell borders, and a moderate amount of eosinophilic granular cytoplasm. **(1pt.)** Neoplastic cells often assume a signet ring cell appearance. **(1pt.)** Nuclei are irregularly round to oval with coarsely clumped chromatin and 1-3 prominent basophilic nuclei. **(1pt.)** There is marked anisocytosis and anisokaryosis **(1pt.)** and numerous multinucleated cells. **(1pt.)** Mitotic figures average 1-2 per 2.37mm^2 **(1pt.)** and are occasionally bizarre. In areas of neoplastic infiltration, the submucosa is diffusely infiltrated by large numbers of lymphocytes and plasma cells. **(1pt.)** Moderate numbers of neutrophils **(1pt.)**are present within papillary neoplastic projections, and in between these projections, there are moderate aggregates of fibrin, neutrophils, and cellular debris. In the submucosa subjacent to papillary projections, the submucosa is expanded by edema, multifocal hemorrhage, and moderate numbers of lymphocytes and plasma cells. **(1pt.)**

MORPHOLOGIC DIAGNOSIS: Penile urethra: Transitional cell carcinoma. **(3pt.)**

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