Title: HISTOLOGIC PARAMETERS IN CANINE EYELID MELANOCYTIC NEOPLASMS AND ASSOCIATION WITH KI67 INDEX

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BACKGROUND: Most cutaneous eyelid melanocytic neoplasms in the dog are classified as melanocytomas based on histologic prognostic parameters used for cutaneous melanocytic neoplasms in general. However, those parameters have not been investigated extensively or compared to Ki67 index specifically in canine eyelid melanocytic tumors.

OBJECTIVE: To compare histologic parameters (nuclear atypia, mitotic count, degree of pigmentation, ulceration, level of infiltration, tumor thickness) to Ki67 index in eyelid melanocytic neoplasms.

METHODS: We selected 120 cases of canine eyelid melanocytic neoplasms submitted to Michigan State University’s Veterinary Diagnostic Laboratory for a prognostic melanoma panel. A Ki67 index of ≥ 15% was used as the gold standard for diagnosing malignant melanoma. The above histologic parameters were retrospectively compared to the Ki67 index threshold of ≥ 15% or <15% using Pearson’s chi squared and Wilcoxon rank-sum tests.

RESULTS: The Ki67 index was < 15% for 92/120 (76.7%) tumors and ≥ 15% for 28/120 (23.3%) tumors. Nuclear atypia (p=0.001), mitotic count (p<0.001), ulceration (p=0.007), and tumor extension beyond the dermis (p=0.054) were associated with Ki67 index. There was no significant association between Ki67 index and degree of pigmentation (p=0.12) or tumor thickness (p=0.62).

CONCLUSIONS: Similar to studies examining canine cutaneous melanocytic tumors at other locations, greater than 20% nuclear atypia, a mitotic count ≥3, the presence of ulceration, and extension beyond the dermis are all associated with a Ki67 index ≥15%. A prognostic study with complete survival data would be necessary to further support the use of these parameters and the established threshold values.