Prognosis After Surgical Treatment of Kiupel High-Grade Cutaneous Mast Cell Tumors

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In the Literature

Moore AS, Frimberger AE, Taylor D, Sullivan N. Retrospective outcome evaluation for dogs with surgically excised, solitary Kiupel high-grade, cutaneous mast cell tumours. *Vet Comp Oncol*. 2020. doi: 10.1111/vco.12565

FROM THE PAGE ...

Cutaneous mast cell tumors (MCTs) are common and diverse in clinical appearance and behavior and account for ≤20% of skin cancers in dogs.¹ Predicting this seemingly unpredictable behavior is challenging.

Histopathologic grade and mitotic index are the most common factors used in predicting prognosis²⁻⁵; however, there are several shortcomings if these criteria are used alone. The 3-tier (ie, Patnaik) system is criticized for its subjective grading criteria.^{6,7} The 2-tier (ie, Kiupel) system uses more objective grading criteria,⁵ but studies evaluating this system have indicated several significant limitations.⁵

Considering the limitations of these grading systems, this study hypothesized that a subset of dogs with localized Kiupel high-grade cutaneous MCTs may have a better outcome than suggested by the original literature. ^{2,5,8,9} In this retrospective study, the outcomes and prognostic factors for dogs with Kiupel high-grade cutaneous MCTs presented without overt metastasis were evaluated. All dogs received curative intent surgical excision of the MCTs, with or without chemotherapy.

A total of 49 dogs were evaluated. Some dogs were not completely staged, although lymph nodes were reported to be of clinically normal size in all dogs. Forty-five MCTs were histologically completely excised. Three of the 4 dogs with histologically incomplete margins underwent re-excision. Chemotherapy (with a variety of protocols) was recommended for all dogs, but only 33 dogs received this treatment.

Local tumor recurrence developed in 9 (18.4%) dogs at a median of \approx 158 days postoperation. Regional lymph node metastasis was diagnosed via cytology in 6 (12.2%) dogs at a median of \approx 273 days postoperation. New MCTs developed in 15 (30.1%) dogs at a median of \approx 495 days postoperation.

Median survival time (MST) for all 49 dogs was 1046 days, with 1- and 2-year survival rates being 79.3% and 72.9%, respectively. Dogs with MCTs with mitotic counts <15/10 hpf had a longer MST (1645 days) as compared with dogs with MCTs with mitotic counts ≥15/10 hpf (162 days). Dogs with smaller tumors (<25 mm) had an improved MST (1645 days) as compared with dogs with larger tumors (≥25 mm; MST, 252 days). Chemotherapy did not appear to improve survival in this study.

This study suggests that the prognosis for dogs with clinical stage 1 (ie, no overt metastasis at time of initial diagnosis), Kiupel high-grade cutaneous MCTs receiving good local tumor control (ie, complete excision) is good, especially for those with low mitotic index and smaller tumor sizes.

... TO YOUR PATIENTS

Key pearls to put into practice:

Adequate surgical control of solitary Kiupel high-grade MCTs may provide longer survival time, especially for dogs with tumors <25 mm and mitotic counts <15/10 hpf.

Grade alone should not be used to predict outcome in these patients; clinical stage and selected treatment also contribute to the outcome

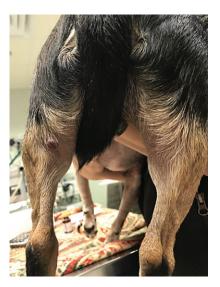
Full clinical staging, specifically regional lymph node histopathology, is recommended for dogs with Kiupel high-grade MCT.

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▲ FIGURE 1 Solitary cutaneous MCT (40 mm) on the right lateral hock. Histopathology confirmed Kiupel high-grade MCT with 20 mitotic figures/10 hpf. The tumor was removed with clean but close margins. Prognosis was guarded to fair due to tumor size (>25 mm), >15 mitotic figures/10 hpf, and clean but close excision.



▲ FIGURE 2 Solitary cutaneous MCT (10 mm) on the caudal left popliteal region. Histopathology confirmed Kiupel highgrade MCT with 10 mitotic figures/10 hpf. The tumor was removed with complete margins. Prognosis was good due to the small tumor size (<25 mm), <15 mitotic figures/10 hpf, and complete excision.