

## HISTOVET, S.L.

Avgda, Països Catalans, 12 Local D  
08192 Sant Quirze del Vallès  
BARCELONA

Clinic Code 00601

18/11/2014

Animal name..	Max
Species.....	CANINE
Breed.....	COCKER SPANIEL
Age.....	7 A
Sex.....	M
Owner.....	Peter Kirchner
Date received	10/11/14

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### Clinical History

Lump on the hindlimb 1 month duration

### Macroscopy

Non ulcerated 2 cm tissue mass. Full cross section.

### Microscopy

The submitted tissue sample presents a round cell infiltration of mastocytic elements with abundant cytoplasmic granulation, which do not display karyomegaly, binucleation or aberrant nuclear figures. This population is accompanied by abundant eosinophils. Mitotic index is low (1-2/HPF). Tumor cells do not contact with the margins of the sample.

### Diagnosis

Low grade mast cell tumor (2-Tier grading)/ differentiated (3-Tier grading)

### Comment

The lesion developed by the animal corresponds to a low grade (differentiated) mast cell tumor. The tumor has been completely removed so that the overall prognosis for the animal should be favorable. However, it is advisable to keep a follow up when dealing with this potentially aggressive tumor.

#### General information

*Mast cell tumors (MCT) are the most common skin tumor in dogs (between 10 to 21%, according to authors). Predisposed breeds include Boxers, Bull Terriers, Boston Terriers, English Bulldogs, Dachshunds, Labradors, Golden Retrievers and Shar-peis, among others. They tend to occur in older animals (9 years on average), but have been described in animals from 3 weeks to 19 years. They appear as dermal nodules, sometimes ulcerated nodules or "satellite", but also can appear localized in the subcutaneous tissue, presenting a similar appearance to a lipoma. The high frequency of paraneoplastic symptoms (gastritis, coagulation) is due to the potent mediators of mast cells containing (heparin, histamine). Keep in mind that tumor manipulation may precipitate the release of these mediators and cause skin edema / acute subcutaneous or gastrointestinal symptoms.*

*Recently, the American College of Veterinary Pathologists reviewed Patnaik old classification based on three levels (level I, II and III) and proposed a simplified classification 2 levels more*

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*accurately reflecting the clinical behavior of these neoplasms. This new classification is based solely on the assessment of four grade criteria (mitotic index, karyomegaly, multinucleation and aberrant nuclear shapes) and classifies neoplasms among:*

- low grade MCT (less aggressive, formerly Patnaik's grade I)
- high grade MCT (aggressive, formerly Patnaik's grade II and III).

*Prognosis of canine MCT with the new 2-Tier grading system:*

*Disease free interval (weeks)*

*Low grade MCT: 13.65*

*High grade MCT: 3*

*Overall survival (months)*

*Low grade MCT: 23*

*High grade MCT: 3.65*

*Tumor associated mortality (%)*

*Low grade MCT: 4.71*

*MCT high degree: 90*

*Relapses / metastasis (%)*

*Low grade MCT: 17.65*

*High grade MCT: 70*

### REFERENCES

*Proposal of a 2-Tier Grading System for Histologic Canine Cutaneous Mast Cell Tumors to More Accurately Predict Biological Behavior. Vet Pathol 2011; vol. 48, 1: pp.147-155.*

## Recommended additional tests

### DETERMINATION OF C-KIT MUTATIONS

c-kit is the oncogene which regulates the proliferation of mast cells. In high-grade mast cell tumors, the presence of mutations in c-kit is associated with overall survival, disease free interval and the development of recurrences. Mutations also determine the response to conventional chemotherapy and / or treatment with tyrosine kinase inhibitors.

In order to assess the presence of mutations in the tumor, it is possible to perform by us immunocytochemical and molecular tests by means of the submitted biopsy sample. Immunocytochemical tests measured the mutation at the protein level, whereas molecular tests investigate genetic mutations. That is, both tests provide similar results, but their joint realization reinforces the validity of the diagnosis.

Should you be interested in performing any of these tests (immunohistochemistry or molecular testing), please contact the laboratory to authorize implementation.

SERVICIO DE DIAGNOSTICO  
HISTOPATOLOGICO VETERINARIO

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