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TREATMENT OF CUTANEOUS MAST CELL TUMOURS

Lluís Ferrer, DVM, PhD, Dip. ECVD
Veterinary School

Universitat Autònoma de Barcelona, Barcelona, Spain

Clinical treatment of mast cell tumors may include surgical excision, chemotherapy, radiotherapy and some combination of these. In dogs, Mast cell tumours should always be treated as potentially malignant neoplasms, because metastasis occur in 30% of cases (especially regional lymph nodes, spleen, liver and bone marrow). Early surgical excision is indicated in animals with a solitary neoplasm (stages I and III of WHO, Table 1). Wide surgical margins, at least 3 cm between the palpable tumour and the incision, has traditionally been recommended. A recent publication, however, suggest that a 2 cm margin may be enough to prevent recurs of grade I and grade II canine mast cell tumours. (Simpson et al, 2003). Histologic grade (Table 2) is an important factor in predicting recurrence at the surgical site. Those that are undifferentiated tend to have a higher recurrence rate. Therefore, after surgery of solitary tumours of grade I and II no further therapy is recommended, but in case of undifferentiated tumours (grade III), it is recommended to administer prednisone (see below) for a few months to avoid recurs. In case of very big tumours, intralesional triamcinolone (see below) before surgery, is indicated.

When surgery alone is not an option (stages II, III and IV) chemotherapy is the most common choice. Glucocorticoid therapy frequently results in partial or occasionally complete remission in canine mast cell tumours. The effect of GC's is to reduce the number of mast cells in the mast cell tumour. The exact mechanism by which glucocorticoids exert their cytotoxic effects on mast cells is unknown although it may be similar to the effects of Gc's on lymphocytes. The type of

GC's administered appear to be unimportant but it has been suggested that intralesional corticosteroids may be more effective than systemic therapy for local disease. The usual dose of prednisone is 0.5 mg/kg/orally administered once daily and that of triamcinolone is 1 mg for every cm in diameter of tumour intralesionally, administered every two weeks. Remission times are usually 10 to 20 weeks. Dogs that are tumour free after 6 months have a low incidence of recurrence and therefore therapy is usually discontinued at this time.

Vinblastine and prednisone and lomustine (CCNU, 90 mg/m²/every three weeks), appear to be the most favoured drug protocols for the treatment of disseminated (stage IV) mast cell tumours.

Radiotherapy has been used alone or in combination with other treatment modalities. Most report indicates remission rates of about 50%-70%. Doses of 3000 – 4000 rads were used in these studies. Total radiation therapy is usually fractionated and delivered over a period of three to four weeks. The use of radiotherapy is somewhat expensive and is confined to the skin.

Ancillary drug therapy is important with canine mast cell tumours. Animals with palpable mast cell tumours or mastocytosis should receive H2 anatagonists (cimetidine, ranitidine, omeprazol), The objective of the therapy is to prevent gastrointestinal ulceration associated with elevated levels of histamine and to treat ulcers already present. Dogs with evidence of gastrointestinal ulceration and bleeding might also benefit from sucralfate (1 g, orally). Because sucralfate interferes with absorption of cimetidine, these two drugs should be given at least two hours apart.

REFERENCE

1. Simpson AMN et al. Evaluation of surgical margins required for complete excision of cutaneous mast cell tumours in dogs. JAVMA 2004; 224: 236-240.

Table 1. Clinical staging system for mast cell tumours

Stage I	One tumour confined to the dermis without regional lymph node involvement a) Without systemic signs b) With systemic signs
Stage II	One tumour confined to the dermis with regional lymph node involvement a) Without systemic signs b) With systemic signs
Stage III	Multiple dermal tumours, large infiltrating tumours with/without regional lymph node involvement a) Without systemic signs b) With systemic signs
Stage IV	Any tumour with distant metastasis or recurrence with metastasis

Table 2. Histologic grading of mast cell tumours

Grade I or well differentiated	Clearly defined cytoplasmic boundary; mitotic figures rare, large, well stained cytoplasmic granules.
Grade II or intermediate	Closely packed cells with indistinct cytoplasmic boundaries; some mitotic figures; some irregular granules in the cytoplasm.
Grade III or anaplastic	Highly cellular; indistinct cytoplasmic boundaries; irregular size and shape of nuclei; frequent mitotic figures; low number of cytoplasmic granules.