# Mast cell tumors

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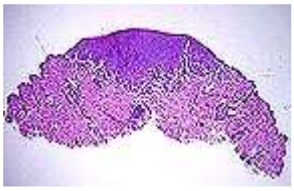
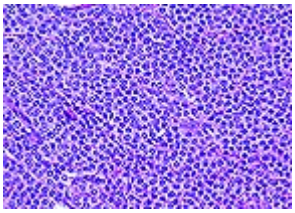
|  | Gross photograph of a ferret with a cutaneous mast cell tumor on the point of the left shoulder. (Photo courtesy of Dr. Steve Sanders, Cottage Veterinary Clinic, Walnut Creek, CA) |
|  | Cutaneous mast cell tumor from a ferret. Note the superficial distribution of the cells - this is why they are easily excised. Also note how the tumor does not elevate the overlying epidermis, which is why these tumors are flat on gross inspection. (HE, 2x) |
|  | Higher magnification view of the neoplasm shown above. Note the monotonous population of mast cells with centrally located hyperchromatic nuclei and few discernable cytoplasmic granules. (HE, 10X) |

Mast cell tumors are the second most common tumor of the skin in the ferret, and an excellent example how diseases of ferrets differ significantly from those of the dog and cat. These tumors generally appear as flat, scaly areas on the skin of the ferret, which may or may not be associated with hair loss. Often, the tumors appear as an itchy scab on the ferret's skin. Mast cell tumors increase in frequency with age in the ferret, and several mast cell tumors may be present at once on the skin of ferrets.

**Mast cell tumors in the ferret are invariably benign, and pose no significant health risk, other than that incurred with general anesthesia and surgery**. However, in the dog, and to a lesser extent, in the cat, mast cell tumors are malignant, and can result in aggressive invasion of surrounding tissues, metastasis to distant tissues, and may result in death. Thus, veterinarians who do not have extensive ferret experience, upon receiving a pathology report documenting the presence of a mast cell tumor, may incorrectly give a poor prognosis, recommend additional surgery, or chemotherapy. The presence of multiple mast cell tumors, or the recurrence of additional mast cell tumors does not warrant a worse prognosis – **all mast cell tumors in the ferret should be considered to be benign**.

Mast cells are cells which help to mediate the immune system of man and animals. They contain substances such as histamine, which when released into the surrounding skin, may result in intense itching, thus these tumors are often associated with intense itching in the ferret. In dogs, the histamine may also result in gastrointestinal ulceration, and gastric ulcers may be seen in dogs with mast cell tumors. However, **gastric ulceration does not occur in ferrets with cutaneous mast cell tumors**; the causes of gastric ulcers are well-documented in the ferret, and mast cell tumors are not one of them.

The treatment for mast cell tumors in the ferret is simple – surgical removal. These tumors are generally well-delineated, and rarely invade below the skin, so removal of the tumors is rarely incomplete. Microscopically, the neoplasm is composed of well-differentiated mast cells with centrally located hyperchromatic nuclei, and a low mitotic rate. Mast cells of ferrets contain few granules as composed to dogs and cats, so special stains such as Giemsa, Luna Mast, or toluidine blue are generally of little assistance. Eosinophils are fairly rare in this tumor, similar to those seen in the cat.

Several years ago, I reported a single case of a poorly differentiated mast cell tumor in the ferret. This tumor was present in numerous abdominal organs, including the liver and mesenteric lymph nodes, but no mestastasis was seen in the skin. This was a rare case that has not been repeated, and I have yet to see a cutaneous mast cell tumor in the ferret with extracutaneous metastasis.

*Bruce Williams, DVM, DACVP*
*January 1999*

http://www.afip.org/ferrets/Mast/mastcell.html

Larger View

Gross photograph of a ferret with a cutaneous mast cell tumor on the point of the left shoulder. (Photo courtesy of Dr. Steve Sanders, Cottage Veterinary Clinic, Walnut Creek, CA)