



**Veterinary Emergency
+ Referral Center**
of Hawaii

**Ettinger: Textbook of
Veterinary Internal Medicine, 7th Edition
Solar-Induced Squamous Cell Carcinoma in Cats
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What is squamous cell carcinoma?

Squamous cell carcinoma is a cancerous disease that most commonly involves skin. Fair-skinned people tend to be predisposed to this type of cancer after chronic, excessive exposure to sunlight. Likewise, white or light-colored cats are also susceptible to squamous cell carcinoma. Solar-induced squamous cell carcinoma usually occurs in areas with little hair coverage that are chronically exposed to sunlight. The most common area affected in cats is the ear tip.

What are the symptoms of squamous cell carcinoma?

This disease occurs in older cats and may first become apparent in summer, when sunlight exposure is greatest. Symptoms may include the following:

- Reddening of the ear tip (likely to be first symptom)
- Mild hair loss and flaking of skin on the ear tip
- Scale and inflamed skin, as with psoriasis

What tests are needed?

If caught early, these clinical signs may be indicative of the precancerous form of the disease known as *actinic dermatitis*. A small skin biopsy is required to differentiate precancerous actinic dermatitis from squamous cell carcinoma. It is best to perform the biopsy procedure early because the clinical lesions of squamous cell carcinoma are subtle and similar to this form of dermatitis. One or both ears may be affected. If only one ear is diseased, the other should be monitored closely because it may also acquire the disease in the future.

What treatment is needed?

Early, effective treatment of precancerous lesions may prevent the onset of squamous cell carcinoma. Treatment for actinic dermatitis includes the following:

- Sun restriction, especially during times of peak solar intensity
- Water-resistant sunscreens with sun protection factor (SPF) 15 or greater applied to the ear tips twice daily
- Topical steroid application
- Possibly oral steroid or anti-inflammatory therapy

The drug etretinate also may be used to alleviate symptoms. The effect of etretinate is to decrease inflammation and skin flaking while normalizing skin cell metabolism. Medical therapy is not effective for lesions that advance to squamous cell carcinoma, which underlines the importance of early diagnosis for suspicious lesions.

Surgical removal of squamous cell carcinoma of the ear tip (partial pinnectomy) is most effective when performed as soon after diagnosis as possible. Early intervention decreases the amount of the ear that

must be removed, because the lesion is smaller. Early surgical removal also decreases the incidence of spread of the cancer to the lymph nodes near the ear.

Different surgical methods are effective in removing the cancer:

- **Cryosurgery**, like frostbite, freezes the ear tip. The frozen tissue dies and is removed. Although this method may be effective, it is sometimes difficult to control the precise area of tissue freezing. Freezing an inadequate area may lead to recurrence of the cancer, and excessive freezing may result in an unsightly appearance and be associated with excessive scar and deformation of the remaining ear.
- **Laser surgery** is available in veterinary medicine, but the equipment is expensive and may be available only at special referral facilities. Laser surgery provides precise removal of the cancer with minimal, if any, side effects.
- **Traditional surgical methods** may be used as well. The procedure is similar to ear cropping in dogs, in which part of the ear is removed with scissors and the skin edges are sutured together. In cats with squamous cell carcinoma of the ear tip, the veterinarian caring for the pet will remove the cancerous ear tip *and* about $\frac{1}{4}$ inch of normal-appearing ear. A small amount of normal-appearing ear is removed to ensure that the entire cancer has been completely removed.

If the biopsy shows that the cancer has not been completely removed, further surgery should be performed. Incomplete removal of the cancer at the initial surgery is not the fault of your veterinarian. Microscopic evaluation of the tissue after special processing is required to determine whether cancer cells are present in the tissue. The naked eye is not able to make this determination.

Cats tolerate the surgery well, and healing should progress without complication. The healed surgery area will have more hair than the ear tip, which will aid in preventing recurrence of the cancer. Preventive care should be continued after successful surgery.

Summary

In summary, prevention of precancerous actinic dermatitis is recommended by the following:

- Limiting the outdoor activity of white or light-colored cats to periods of nonpeak solar intensity
- Applying appropriate sunscreens to the ear of predisposed cats who are outdoors during periods of peak solar intensity

If your cat is diagnosed with actinic dermatitis, it should be treated aggressively in the hope of preventing cancer. Progression of actinic dermatitis to squamous cell carcinoma requires surgery to remove the cancer. Because of availability and financial considerations, most cats with this form of cancer receive treatment consisting of traditional surgery.

The appearance of your cat's ear after surgery will depend on the extent of the disease. The ear may simply appear rounded at the tip or require complete removal. If the entire ear is removed, your cat will still be loved and cute, with a striking resemblance to "E.T." of movie fame. Either result is far better than uncontrolled spread of cancer to deeper tissues of the head.