The most notorious disease of the nasal planum in cats is squamous cell carcinoma, however there are numerous other non-neoplastic conditions to consider when presented with a cat with an ulcerated, erythematous and crusty, swollen or even proliferative/nodular nose in this species. Because a wide variety of diseases may present with similar clinical signs, the most helpful diagnostic test (after a thorough history and physical examination) is a skin biopsy.

NEOPLASTIC

Squamous cell carcinoma (SCC) is believed to be caused by ultraviolet (UV) light damage as light coloured (un-pigmented or lightly pigmented) cats, especially those living at high attitude, are overrepresented. Tumours occur on the nose, eyelids and ears initially looking like a smudge of dirt, a crust (actinic keratosis) progressing to a non-healing ulcer with adjacent reactive proliferation. Numerous treatments are available: surgical resection or cryotherapy are traditional mainstays of treatment, however plesiotherapy, photodynamic therapy, intra-lesional chemotherapy and combinations of these are also being used. Some recent novel treatments include:

- **photodynamic therapy** (PDT) using topical 5- aminolaevulinic acid showed an excellent response of 85% to a single treatment, however 2/3 of the cats had recurrence;
- PDT using the photosensitizing agent 5-aminolaevulinic acid (5-ALA) topically and a high-intensity red light source resulted in a 96% response rate but 51% of treated cats had recurrence. Those cats received a second treatment, resulting in 45% being disease free at median follow-up of 1,146 days;
- hematoporphyrin-based PDT failed to treat serious disease;
- using an accelerated proton beam radiation protocol, Fidel achieved a 60% complete response, 33% partial response and median survival of 946 days;
- superficial radiotherapy given concurrently with intralesional carboplatin resulted in complete responses in 100% of cats;
- 86% of plesiotherapy (90-Strontium) treated cats achieved complete response with one or two treatments and no recurrence of disease was seen during the follow-up period;
- in a larger group of 90-Sr-treated cats, 88% achieved complete response and a median survival of 3,076 days. As overall survival time was significantly longer for cats with a complete response to treatment than for those with a partial response, initial response to treatment appears to be predictive of overall survival time;
- a pilot study using boron neutron capture therapy was found to be safe and effective;
- a liposomal photosensitizer has been used for phototherapy of feline SCC achieving complete response rate of 100% with a recurrence rate of 20%;
- an electrochemotherapy protocol was assessed combining local administration of bleomycin (plus hyaluronidase for a more uniform distribution) with permeabilizing biphasic electric pulse. Complete response in 7 of nine cats for up to 3 years;
- actinic dysplasia and superficial squamous cell carcinoma involving less than 50% of the nasal planum were treated with a three-cycle curettage and diathermy resulting in complete response in 100% of cats. The probability of remaining disease free after 12 months was 0.94.

Other reports of neoplastic nasal planum disease include one in which SCC was present along with two papillomaviruses. This is interesting because in humans, papillomaviruses promote the development of SCC on sun-exposed skin. In a retrospective study of tumors of the nose and paranasal sinuses in 32
cats, there were 16 that affected the nasal planum: 15 were SCC with one being a fibrosarcoma. The SCC were treated with radiation therapy alone (11/13) or radiation following surgery (2/13). Radiation was either orthovoltage x-ray or cobalt-60. All responded completely but the tumour recurred in 11/13 with a median survival time of 12 months. The fibrosarcoma of the nasal planum was removed via cryosurgery with no recurrence 120 months following the procedure14.

In a retrospective study of feline cutaneous hemangiosarcoma, one case had small raised red nodules on the nasal planum as the only site15.

**IMMUNE-MEDIATED**

Pemphigus foliaceus causes pustules and crusted lesions, on the pinnae, nasal planum, periocular area, chin, and feet of affected cats. The diagnosis is made with finding subcorneal pustules with nondegenerate neutrophils and acantholytic cells on histopathology. Treatment is with immunosuppressive doses of corticosteroids alone or in combination with other immunosuppressive agents, (e.g., chlorambucil or cyclosporin). Treatment is generally lifelong16.

Bergvall reported a novel ulcerative nasal dermatitis of young Bengal cats in Sweden. Lesions are limited to the nasal planum and appear as fissures, crusts, erosions and ulcers. After unsuccessful treatment with antimicrobials and corticosteroids, tacrolimus ointment resulted in improvement17.

**ALLERGIC**

Since the early 1990s, mosquito-bite hypersensitivity has been recognized as a cause of nasal planum disease. Clinical and histologic features suggest the diagnosis; treatment consists of indoor confinement to eliminate exposure to mosquitos (long-term) and systemic corticosteroids (short-term)18. Similarly, flea-bite hypersensitivity may cause crusting and pruritis of the nasal planum. Elimination and prevention of fleas along with corticosteroid therapy is indicated.

**INFECTIOUS**

Herpesvirus dermatitis may be manifested as a progressive dermatosis on the muzzle including the nasal planum. One study attempted to treat it using recombinant interferon omega (rFeIFN-ω) perilesionally, intradermally and subcutaneously. Lesions regressed in size but did not resolve19. Herpesvirus may also cause dermatitis that does not involve the face20. Herpesvirus is confirmed through FHV-1 immunohistochemistry. FHV-1 PCR appears to be more diagnostically reliable for herpetic dermatitis than it does for conjunctival or corneal disease21. Treatment seems to be responsive to systemic famciclovir therapy (90 mg/kg PO q8h).

Mycobacteria may cause ulceration, however they are more likely to involve the inguinal area. Fungal organisms that may affect this part of the face include Cryptococcus neoformans and dermatophytes; extension from naso-orbital and sinuses may occur with Aspergillus sp., Penicillium sp. or Fusarium sp.22,23. Appropriate therapy depends, to some degree, on the patient as well as the organism; itraconazole may be appropriate for cryptococcosis and dermatophytosis. Mites, (notoedric, demodectic, otodectic, or trombicular) may be implicated.

**REFERENCES**


