

## FELINE PRACTICE – DERMATOLOGY

Two cases of calcinosis circumscripta are described. In both cats the lesion occurred in the dorsal thoracic region. One cat was treated by surgery. In the other case complete regression was seen after treatment with Vitamin C and a homeopathic preparation. It is suggested that the lesions could have been induced by subcutaneous injection(s).

### CASE REPORTS

## Calcinosis Circumscripta in Two Cats

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### **Introduction**

Calcinosis circumscripta has been documented in dogs, humans, nonhuman primates, and horses.<sup>1</sup> Only two cases have been reported in cats; one in the subcutis at the dorsal thoraco-lumbar area<sup>2</sup> and the other on the tongue.<sup>1</sup>

In dogs, widespread calcinosis cutis can be associated with natural or iatrogenic hyperglucocorticoidism. Chronic renal failure can result in calcinosis of footpads. The majority of cases have been seen, however, as an idiopathic localized form mostly in younger dogs of large breeds, over or near pressure points.<sup>3</sup> This article describes two cases of calcinosis circumscripta in Persian cats.

### **Clinical History**

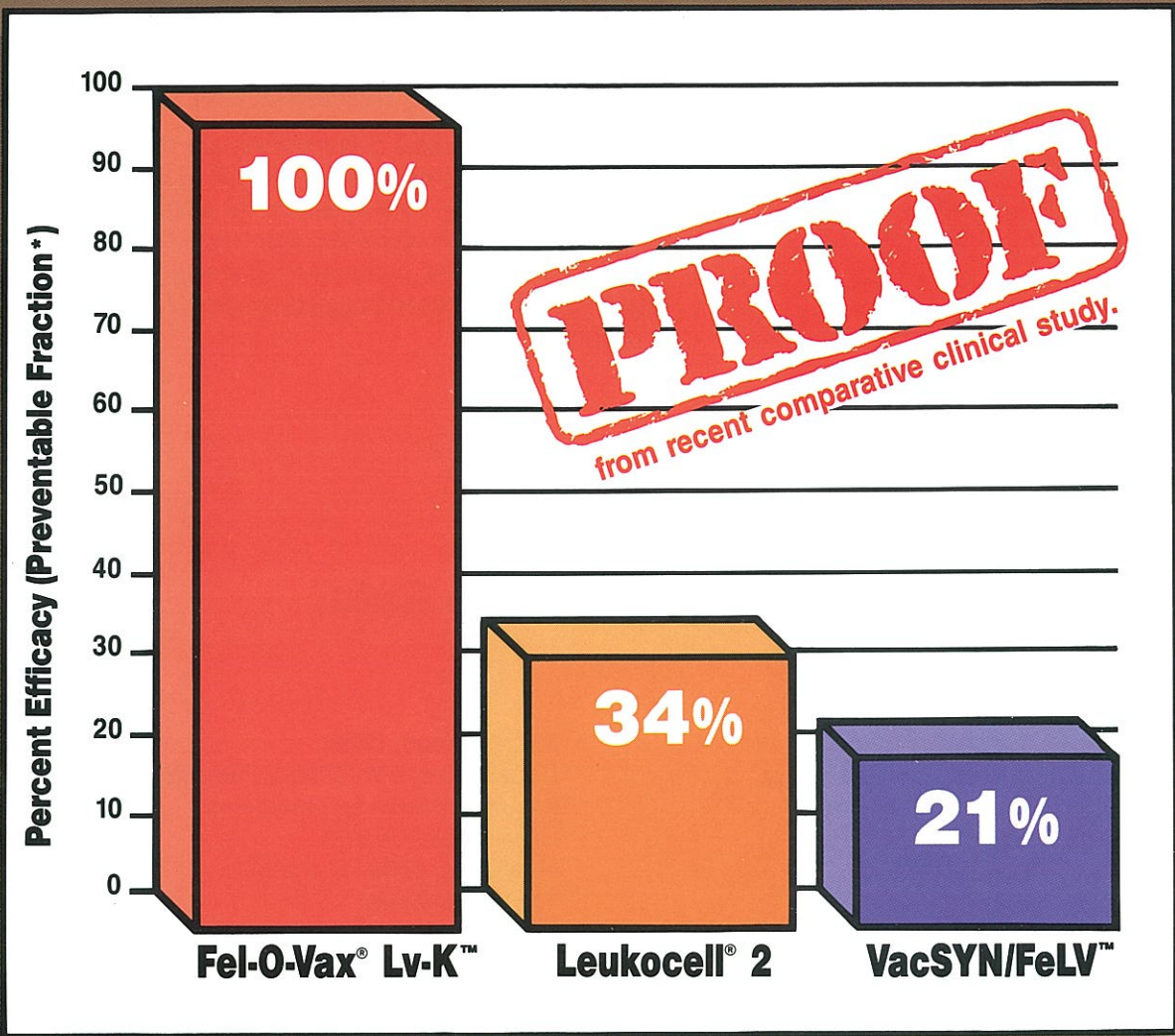
#### **CASE 1**

A 4½-year-old, castrated Persian cat, chinchilla color, was presented because of a single skin le-

sion in the dorsal thoracic region. In this region a circular alopecic area had been present for about 3 years. During that time the cat had been treated with cythioate (Proban®:Haver/Diamond Scientific, Shawnee, Kans.), antiparasitic shampoos, prednisone, and levothyroxine (T<sub>4</sub>) orally. Approximately 2 years earlier, a sedative was injected at an unknown place to allow cleaning of the cat's teeth. Approximately 1 year ago, a vaccination was given in the neck area, and proligestone was injected twice, probably in the neck area.

One week before presentation, the single alopecic area changed into a yellow nodule. This pruritic lesion was licked frequently. On physical examination, a subcutaneous mass of 3 cm in diameter was found dorsal just between the shoulder blades. The mass consisted of some yellowish subcutaneous nodules. Apart from slight alopecia of the flanks no further lesions were found. After sedation, a punch biopsy was obtained, which was immediately fixed in 10% for-

*Continued*



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<sup>1</sup>Comparison of the Efficacy of Three Commercial FeLV Vaccines in a Natural Exposure Challenge—A.M. Legendre, et. al. Study conducted by College of Veterinary Medicine, University of Tennessee, Knoxville, Tennessee at Fort Dodge Laboratories, Fort Dodge, Iowa.

$$\text{*Preventable Fraction} = \frac{\% \text{Viremia Controls} - \% \text{Viremia Vaccinates}}{\% \text{Viremia Controls}} \times 100$$



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## CALCINOSIS CIRCUMSCRIPTA

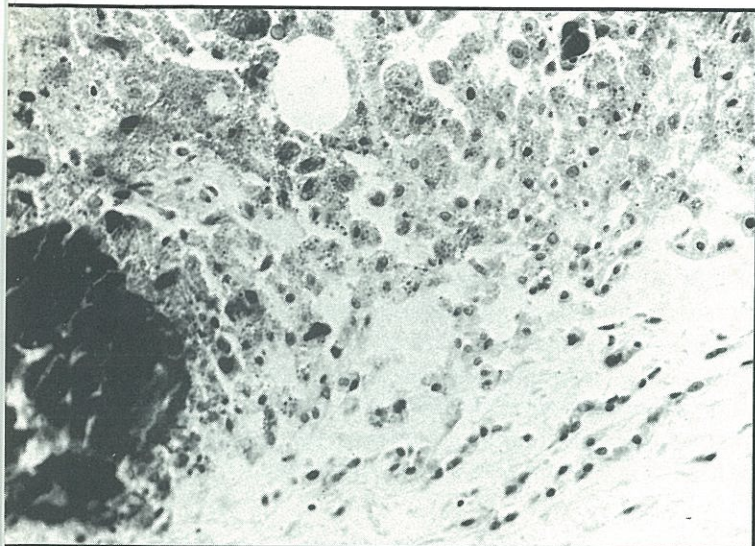


FIG. 1 — Amorphous mass and fine granular material, among others in macrophages shown in Case 1 (200X, PAS).

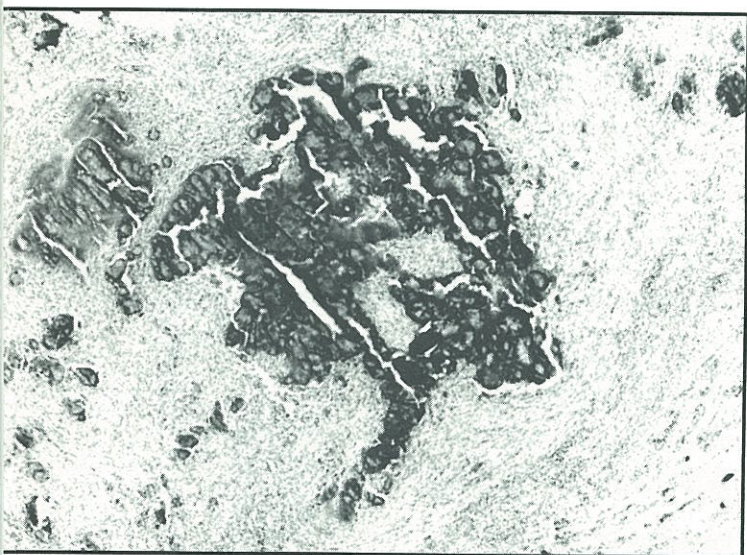


FIG. 2 — Calcified mass, surrounded by connective tissue shown in Case 2 (20X, H&E).

malin, and submitted for histological examination. A blood sample was performed for determination of  $T_4$  because the cat may have had an earlier episode of hypothyroidism. The  $T_4$  value was 40 nmol/L, which is in the normal range.

### CASE 2

A skin biopsy from a 6-year-old, spayed Persian cat was presented for histopathological examination 2 months after Case 1. A piece of skin with a 3-cm diameter had been removed from the neck. The duration of the lesion was unknown. Macro-

scopically, this skin sample showed a well-circumscribed dermal mass, which displayed a chalky, white pasty material at cut surface.

### Histopathology

Paraffin sections of 4  $\mu$ m were stained with hematoxylin and eosin (H&E), periodic acid-Schiff (PAS), toluidine blue, Gram, and von Kossa stains.

In both cases the lesions had almost the same morphology. The epidermis was normal. In the superficial dermis a slight increase of mast cells was seen. In the deep dermis and subcutis fine granules (especially in Case 1) and larger fragments of basophilic, PAS-positive material were found (Fig. 1). This material was embedded in connective tissue that was rich in collagen in Case 2 (Fig. 2). In this connective tissue numerous mononuclear macrophages and a variable amount of lymphocytes were present. Also a few multinucleated histiocytic giant cells of foreign body type were seen.

### Author's Note

Chiroplexan is a homeopathic remedy, that can be applied to nearly all appearances of lesions in bone. The formation of fibrous tissue, cartilage, and bone is stimulated by a physiological reaction irrespective of the causes, even imperfect bone formation after fractures, osteoporosis, or systemic softening of vertebrae, intervertebral disks, and joints. In addition to slowly improving the motility, an increased excretion of waste materials occurs by stimulation of metabolism. Chiroplexan contains components for an improved uptake of materials for the formation of bone and connective tissue.

The major indication is for bones with other indications including improvements of the skeleton, lesions of joint ligaments, articular and spinal diseases, and arthrosis.

Chiroplexan 100 ml is composed of the following:

- 3 ml of calcium carbonium D10, calcium phosphoricum D8, and silicea D9;
- 10 ml of *Artemisia vulgaris* D1, *Calamus aromaticus* D1, *Euphorbia cyparissias* D4, *Hypericum perforatum* D3, *Ilex aquafolia* D3, and *Symphytum officinale* D2;
- 15 ml of *Equisetum arvense*; and
- 100 ml of ethanol 50% volume.

*Continued*

The basophilic material was stained brown to black in the von Kossa stain indicative for calcium deposits. No fungi or bacteria were found.

**Treatment**

**CASE 1**

Because of the severe pruritus prednisone was given orally, 5 mg daily for 17 days. The pruritus stopped but the lesion remained unchanged. The owner was advised to have the nodule removed but did not agree with the recommendation of surgical excision. On the owner's initiative the cat was given Vitamin C (ascorbic acid) 500 mg daily for 3 months in combination with Chiroplexan (A. Pfluger KG, D-4840, Rheda-Wiedenbruck, Germany), a homeopathic combination preparation that is recommended for lesions of the skeleton and connective tissues and contains ten components (see Author's Note on p. 11). After 4 months, the lesion had disappeared completely and the skin and fur at the affected area had a normal appearance.

**CASE 2**

The lesion was totally excised and 10 days after the surgery the skin wound had healed very well. In the 3 months following, no recurrence was seen.

**Discussion**

The etiopathogenesis of calcinosis circumscripta is still unclear. Classically, two forms of pathologic tissue calcification occur, the dystrophic and metastatic forms.<sup>4</sup> In the dystrophic form, calcium salts are deposited in degenerated cells and altered collagen or elastic fibers. In the metastatic form, the calcium salts are deposited in normal tissue due to hypercalcemia. In our cases no clinical indications for a disturbed calcium metabolism were present, although analysis of the blood was not done. Thus, the lesions probably were related to trauma. It has been postulated that calcinosis circumscripta is caused by prolonged trauma.<sup>5</sup> The trauma in our cases could have been caused by subcutaneous injections. In Case 1 the cat was treated with drugs because of alopecia and was vaccinated. Except for the vaccination in the neck region, the injection sites were not known; however, the neck region is often used as an injection site.

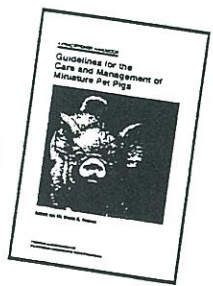
The usual successful therapy is complete surgical excision. In Case 1, however, the lesion disappeared without surgery. Perhaps the Vitamin C had a positive influence. This vitamin is involved in

many biological processes, including possibly calcium metabolism.<sup>6</sup> Vitamin C has been used in humans to treat a variety of diseases characterized by defects in neutrophil function, including chronic granulomatous disease, Chédiak-Higashi syndrome, and recurrent cutaneous staphylococcal infections. Defects in neutrophil chemotaxis were associated with lowered leukocyte ascorbate levels.<sup>7</sup> Booth and associates reported that Vitamin C increases the rate of soft tissue wound healing in horses.<sup>8</sup> The overall benefit of such therapy is difficult to assess, because of lack of controls. In addition to the Vitamin C, in Case 1, a homeopathic treatment was given which could have had an effect by itself or in combination with the Vitamin C. ■

**REFERENCES**

1. Anderson WI, Cline JM, Scott DW: Calcinosis Circumscripta of the Tongue in a Cat. *Cornell Vet* 78:381-384, 1988.
2. Anderson WI, Scott DW: Calcinosis Circumscripta in a Domestic Short-haired Cat. *Cornell Vet* 77:348-350, 1987.
3. Muller GH, Kirk RV, Scott DW: *Small Animal Dermatology*, ed 4. Philadelphia, WB Saunders Co, 1989, p 950.
4. Cheville NF: *Introduction to Veterinary Pathology*. Ames, Iowa State University Press, 1988, p 103-104.
5. Stampley A, Bellah JR: Calcinosis Circumscripta of the Metacarpal Pad in a Dog. *JAVMA* 196:113-114, 1990.
6. Nobile S, Woodhill JM: *Vitamin C*. Lancaster, England, MTP Press Ltd, 1981, p 66-67.
7. Kirk RW: *Current Veterinary Therapy*, ed 9. Small Animal Practice. Philadelphia, WB Saunders Co, 1986, p 595.
8. Booth NH, McDonald LE: *Veterinary Pharmacology and Therapeutics*, ed 6. Ames, Iowa State University Press, 1988, p 698.

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