

# *Pacific Tide*

*An informational newsletter*

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## About our Author

### Katherine Doerr, DVM

Dr. Katherine Doerr received her Doctorate in Veterinary Medicine from University of Florida in 2010. She completed an internship at the University of Pennsylvania in 2011. She is currently finishing her residency at the University of Davis in Dermatology and is fully credentialed to sit for boards in November 2013.

Dr. Doerr's special interests include clinical allergy management, cutaneous manifestations of systemic diseases, and autoimmune/ immune-mediated dermatoses.

In her free time she enjoys the outdoors, with a special interest in anything involving a wetsuit and the ocean. She also enjoys traveling with her family, cycling, hiking, fishing, and running. She shares her life with an ornery cat named "Noodles" and a black Labrador named "Toby."

Dr. Doerr will be available for dermatology appointments at both the Capitola and Monterey locations in August of 2013.



**Katherine  
Doerr, DVM**

# Calcinosis Cutis in Dogs

Calcinosis cutis is an uncommon occurrence in which inorganic, insoluble mineral salts are deposited in the dermis, subcutis, and rarely the epidermis. The mineral precipitation commonly involves the dermal collagen and elastin fibers. Calcinosis cutis can be a cutaneous marker of underlying systemic disease. It can be seen secondary to, or in association with, a number of disorders including the following: iatrogenic or endogenous hyperglucocorticism, underlying systemic calcium or phosphorous imbalance (i.e. impaired renal function, systemic fungal infections), percutaneous absorption or injection of calcium-containing products into the skin, conditions causing inflammation in the skin (i.e. follicular cysts, interdigital pyoderma, foreign body granuloma, demodicosis, pilomatrixomas), or idiopathic.

Signalment is important in determining the underlying etiology of the mineral deposits in the dog. In a recent study just completed at UC Davis, Rottweilers, Staffordshire terriers, Boxers, Akitas, and Pomeranians were breeds that were over represented compared to the hospital population. Age of onset of calcinosis cutis was dependent upon the underlying etiology. Dogs with endogenous hyperglucocorticism, due to either adrenal dependent hyperadrenocorticism (ADH) or

pituitary dependent hyperadrenocorticism (PDH), had an average age of onset of 9 to 11 years; while dogs with exogenous hyperglucocorticism, due to chronic corticosteroid usage, had an average age of onset around 6 years. Dogs with idiopathic calcinosis cutis commonly were less than 1 year of age. Male and female dogs were equally represented.

The appearance of lesions of calcinosis cutis depends upon the severity of the mineral deposition. In early lesions, one may only palpate firm nodules, or may see deposition of chalky, pink material with an irregular margins and palpable grittiness. Most commonly presented lesions consist of well-demarcated erythematous, crusted, ulcerative papules and plaques on the dorsal neck, inguinal region, axillae, and rarely the extremities and genitalia.

Diagnosis of calcinosis cutis is based upon physical examination findings, cytology to look for secondary infection, and histopathology to confirm suspected clinical diagnosis. The skin biopsy should be representative of the lesion, preferably of a non-ulcerated region, and submission to a histopathologist. Biopsy results may reveal mineralization in the dermis, subcutis, or epidermis with secondary inflammation. Secondary

bacterial infection is common and necessitates appropriate antimicrobial therapy. If prior antibiotic administration has occurred in the preceding year on the dog, aerobic culture and sensitivity should be considered to evaluate for involvement of potential resistant staphylococcal strains. Determining the inciting cause of the calcinosis cutis is required or else the stimulus for calcium phosphorous mineral deposition will still be present.

Therapy is dependent upon the underlying etiology (i.e. tapering off of corticosteroids, treating for ADH/PDH, etc). If a secondary bacterial pyoderma is present, antibiotic therapy should continue for a minimum of 4-6 weeks or one week following resolution of the infection. Furthermore, daily topical dimethyl sulfoxide (DMSO) gel may assist in hastening lesion resolution.



Calcinosis cutis on the dorsal neck of a dog.  
Compliments of UC Davis, VMTH



Calcinosis cutis on the inguinal region of a dog.  
Compliments of UC Davis, VMTH

## Our Doctors

### Internal Medicine

Kelly Akol, DVM, DACVIM (small animal)  
Merrienne Burtch, DVM, DACVIM (small animal)  
Michelle Pressel, DVM, DACVIM (small animal)  
Ryan Garcia, DVM, DACVIM (small animal)

### Surgery

Lisa Metelman, MS, DVM, DACVS  
Tom LaHue, DVM, DACVS

### Oncology

Theresa Arteaga, DVM, DACVIM (Oncology)

### Critical Care

Colleen Brady, DVM, DACVECC  
Lillian Good, DVM, DACVECC

### Cardiology

Mandi Kleman, DVM, DACVIM (Cardiology)

### Dermatology (August 2013)

Katherine Doerr, DVM

### Radiology (VRS)

Larry Kerr, DVM, DACVR  
Mark Lee, DVM, DACVR

### Emergency

Christian Robison, DVM  
Kim Delkener, DVM  
Mark Saphir, DVM  
Jessica Kurek, DVM

### Behavior

Jan Brennan, DVM (practice limited to behavior)

## About Our Hospitals

Pacific Veterinary Specialists was founded to provide high quality, specialized medical care to companion animal patients. Our practice is dedicated to serving the veterinary community as a partner in total patient care. We offer comprehensive specialized services including endoscopy, Doppler ultrasound, surgery, 24-hour ICU care, and emergency and critical care. Our staff is committed to providing compassionate and thorough medical care that meets the needs of the patient, client, and referring veterinarian. In September 2011 we opened PVSM and offer internal medicine, oncology, and cardiology Tuesday through Thursday in Monterey. Behavior consultation by appointment is available on Mondays.

### Pacific Veterinary Specialists

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