Parasite Haven?

FOCUS: Parasites

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Dog parks are increasingly popular in the United States, especially in urban and suburban areas. However, little information on the correlation between dog park attendance and parasite infection is available. This study aimed to fill that gap by examining the prevalence of enteric parasites, particularly *Giardia* spp and *Cryptosporidium* spp, and GI signs in dogs that visited parks in northern Colorado and those that do not. Fecal samples and detailed surveys were collected from 129 dogs whose owners were students or staff at Colorado State University Veterinary Teaching Hospital. Feces were examined for parasites microscopically and by immunofluorescence assay (FA); FA-positive samples were genotyped. Seven dogs attending dog parks and 2 dogs that did not were positive for at least one of the following: *Ancylostoma caninum*, *Toxocara canis*, *Trichuris vulpis*, *Cryptosporidium* spp, and *Giardia* spp. Dogs that attended dog parks were more likely to be infected with *Giardia* or *Cryptosporidium* than dogs that did not, although the infections were largely subclinical and there was no correlation between dog park attendance and GI signs.

Commentary

Despite the small sample size, this study demonstrates a statistically significant correlation between dog park attendance and infection with *Giardia* and *Cryptosporidium*. This is not surprising, given the high traffic in dog parks and the fact that infected dogs' feces may be difficult to remove from the environment. The infected dogs in this study showed minimal clinical signs, perhaps because their owners are veterinary professionals who likely provide a high level of care. Further studies should be conducted to confirm the presence of infective parasites in dog parks in this area.—*Carly Jordan, PhD*

Source

Prevalence of *Giardia* and *Cryptosporidium* species in dog park attending dogs compared to non-dog park attending dogs in one region of Colorado. Wang A, Ruch-Gallie R, Scorza V, et al. ***VET PARASITOL*** 184:335-340, 2012.

Negative Study Findings = Good News

FOCUS: Parasites

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This study looked at some of the commonly implicated bacterial and parasitic causes of diarrhea in cats, comparing fecal samples from cats with and without diarrhea. Samples from 219 diarrheic cats and 54 nondiarrheic cats were evaluated using centrifugation flotation, culture, ELISA (*Giardia*, *Cryptosporidium*, *Clostridium perfringens* enterotoxin [CPE], *Cl difficile* toxin A), and polymerase chain reaction (PCR) testing (*Tritrichomonas foetus*, *Campylobacter* spp). The fecal samples were processed within 2 to 3 hours after submission. The overall prevalence of the parasites studied was low; there was no significant difference in prevalence between diarrheic and nondiarrheic cats. However, all cats testing positive for 1 or more parasites had diarrhea except for 1 nondiarrheic cat that tested positive for *Giardia*. *Campylobacter* was detected by PCR in 74 of 131 cats and was isolated from significantly fewer diarrheic cats than nondiarrheic cats. *Campylobacter* species identified by PCR included *C jejuni, C upsaliensis*, and *C helveticus*. The pathogenic role of *C helveticus* is questionable because it has a high prevalence in cats both with and without diarrhea. *Cl perfringens* was isolated from 43% of diarrheic cats and 63% of nondiarrheic cats, supporting prior presumptions that *Cl perfringens* has little clinical importance in cats. CPE was detected in 4.1% of diarrheic cats and 1.9% of nondiarrheic cats.

From the Editor in Chief

Commentary

Diagnosing and managing a cat with chronic small bowel diarrhea can be challenging. After ruling out inflammatory bowel disease, intestinal lymphoma, and common parasites, we are left with possible dietary sensitivity and the need for an elimination diet trial. Afterward, the plot thickens, as there are a number of other more challenging diagnoses and one always wonders: What may have been missed?

Some of the more obscure "missed" infectious diseases documented in the literature include *Clostridia* and *Campylobacter* infection. Even if we do identify these organisms, there is always the possibility that they are part of the normal flora. Thanks to the work of Drs. Queen, Marks, and Farver, we now know this supposition is largely correct. We can perhaps afford to relax slightly and not worry that we are missing a potential infectious cause. It is not often that a study with negative results makes an impact, but this may be one of those times.—*Colin F. Burrows, BVetMed, PhD, Hon FRCVS, DACVIM*

Source

Prevalence of selected bacterial and parasitic agents in feces from diarrheic and healthy control cats from northern California. Queen EV, Marks SL, Farver TB. ***J VET INTERN MED*** 26:54-60, 2012.

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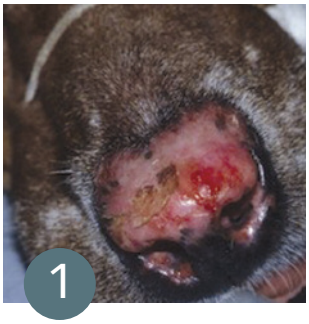
Variant of Lupus

In this case report, the authors describe a variant of discoid lupus erythematosus (DLE) limited to the skin in a 9-year-old Chinese crested dog. The dog had a 9-month history of progressive skin disease characterized by annular to polycyclic, hyperpigmented, scaly to erythematous lesions. Lesions had central whitish macules, papules and plaques, crusts overlying deep erosions/ulcers, or hypopigmented atrophic scars. Except for its skin, the dog was otherwise healthy.

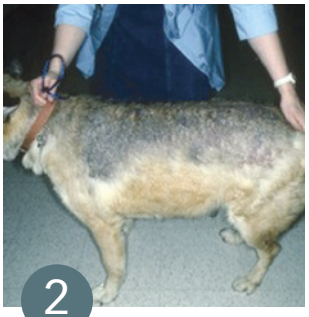
Several 8-mm skin biopsy specimens revealed cell-rich lymphocytic interface dermatitis. Direct immunofluorescence revealed deposition of immunoglobulin (Ig)G, IgM, IgA, and activated complement along the dermal–epidermal junction. The diagnosis was chronic cutaneous lupus erythematosus (CCLE). Systemic lupus erythematosus was ruled out via antinuclear antibody titer, serum biochemistry panel, CBC, and urinalysis. Because the lesions resembled those seen in humans with generalized DLE, treatment with 0.1% topical tacrolimus and oral hydroxychloroquine (HCQ; 5 mg/kg q24h) was initiated as is recommended in humans with DLE. The lesions began to improve within 4 days of starting treatment and remission was induced over the next year, with the exception of 3 disease flares, 2 of which occurred during induction.



Courtesy of Dr. Karen Moriello

1

Nasal lesions associated with lupus.



Courtesy of Dr. Karen Moriello

2

Lesions limited to the skin of a patient with lupus.

Commentary

There are 2 interesting features of this skin disease: the description of yet another variant of lupus and the choices for treatment. In this case, lesions did not involve the nose but rather were widespread over the skin. Nasal lesions (**Figure 1**) of lupus are well recognized, but less so are lesions limited to the skin (**Figure 2**).

HCQ is an antimalarial drug used in human medicine for the treatment of immune-mediated diseases, such as lupus or rheumatoid arthritis. The drug is contraindicated in patients with preexisting retinal disease, and a complete ocular examination is recommended. HCQ has been used to treat dogs with exfoliative cutaneous lupus erythematosus (ECLE); the disease process was slowed but not cured,[1] possibly because ECLE has systemic signs. HCQ as treatment for lupus has been limited in veterinary medicine, but given its low cost and that it is well tolerated, its use may increase.
—*Karen Moriello, DVM, DACVD*

Source

Successful treatment of a novel generalized variant of canine discoid lupus erythematosus with oral hydroxychloroquine. Oberkirchner U, Linder KE, Olivry T. ***VET DERMATOL*** 23:65-70, 2012.

1. **Exfoliative cutaneous lupus erythematosus in German shorthaired pointer dogs: Disease development, progression and evaluation of three immunomodulatory drugs (ciclosporin, hydroxychloroquine, and adalimumab) in a controlled environment.** Mauldin EA, Morris DO, Brown DC, Casal ML. *Vet Dermatol* 21:373-382, 2010.

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Countering Doxorubicin Extravasation

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Anthracyclines, including doxorubicin, are potent vesicants causing severe tissue ulceration and necrosis following extravasation. Initial signs of extravasation may go unnoticed in veterinary patients, partly because signs of local tissue pain may be easily confused with restlessness during restraint for chemotherapy. In this report, the records of 4 dogs with known or suspected doxorubicin extravasation are discussed. The dogs were treated with dexrazoxane, the only drug currently approved for anthracycline extravasation in humans. Administration occurred within 2 hours of known extravasation in 3 dogs and 48 hours after suspected extravasation in the fourth dog.

Clinical findings included mild erythema and edema at the extravasation site in the 3 dogs that received dexrazoxane within 2 hours of extravasation and extensive tissue necrosis requiring surgical intervention in the dog treated 48 hours after suspected extravasation. The most effective dose and timing of administration are unknown, but evidence suggested administration within 6 hours. While further studies are required to confirm efficacy and optimal use of dexrazoxane in veterinary patients, its use should be strongly considered when extravasation during anthracycline administration occurs.

Commentary

Dexrazoxane can substantially reduce the severity of tissue damage associated with doxorubicin extravasation. However, it is important to remember 3 key points.

First, it is always preferable to avoid extravasation altogether. Only staff experienced in animal restraint and catheter placement should administer chemotherapy. Catheters must be placed cleanly on the first stick, using a vein that has not been punctured within the previous 24 hours. Patients should be treated in a quiet area, and sedation should be considered for fractious or uncooperative patients.

Second, early recognition and prompt intervention are crucial. *Patients must be directly observed throughout the entire treatment*. In this study, amputation was required only for the dog in which extravasation was not recognized for 48 hours, when clinical signs began to manifest.

Third, preparation is paramount. A printed copy of the extravasation protocol should be available at all times. Veterinarians administering doxorubicin should have a vial of dexrazoxane on hand. If this is not cost-effective (the drug is expensive), then a known source (eg, referral hospital or pharmacy) that can rapidly provide the drug should be identified in advance.—*Dennis Bailey, DVM, DACVIM (Oncology)*

Source

Dexrazoxane treatment of doxorubicin extravasation injury in four dogs. Venable RO, Saba CF, Endicott MM, Northrup NC. ***JAVMA*** 240:304-307, 2012.

While the most effective dexrazoxane timing is unknown, evidence suggested administration within 6 hours.

Vaccine Candidate for *Toxoplasma gondii*

FOCUS: Parasites

Research Note

Researchers have been testing potential vaccine candidates for *Toxoplasma gondii* for many years, and a team from China has added one more to the list. *T gondii* rhomboid protein 1 (*TgROM1*) is expressed in the tachyzoite stage and plays an essential role in host cell invasion. A DNA vaccine encoding the *TgROM1* protein was used to vaccinate mice against a lethal challenge by *T gondii* with promising results. Vaccinated mice created specific antibodies to *TgROM1*, exhibited proliferation of lymphocytes and production of cytokines, and survived the disease longer than naïve mice. These results suggested that *TgROM1* triggers strong humoral and cellular responses and prolongs survival time against *T gondii* infection in mice, warranting further studies as a potential vaccine candidate.

http://www.onehealthinitiative.com/

Source

Toxoplasma gondii rhomboid protein 1 (TgROM1) is a potential vaccine candidate against toxoplasmosis. Li J, Han Q, Gong P, et al. ***VET PARASITOL*** 184:154-160, 2012.