Predispositions for Calcium Oxalate Urolithiasis in US Dogs

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Risk for CaOx urolithiasis increases based on breed, increasing age, and neutered male signalment.

In the Literature

Hunprasit V, Schreiner PJ, Bender JB, Lulich JP. Epidemiologic evaluation of calcium oxalate urolithiasis in dogs in the United States: 2010–2015. *J Vet Intern Med*. 2019;33(5):2090-2095.

FROM THE PAGE ...

The prevalence of calcium oxalate (CaOx) urolithiasis is increasing, and CaOx is the most frequent urolith submitted for analysis in the United States.[1] Previous studies have identified breed predispositions for CaOx urolithiasis, but these were not conducted within the last decade and did not account for breed popularity in the United States.[1,2]

This study* sought to identify breeds at high and low risk for CaOx urolith development. Dogs that had CaOx uroliths analyzed at the University of Minnesota Veterinary Medical Center from 2010 to 2015 were compared with 3 control groups during the study period:

- Dogs that formed nonCaOx uroliths
- Dogs admitted without urinary tract disease
- A population from a breed popularity survey during a similar time period (2013-2016)

Breeds were considered to be at high or low risk if their odds ratio from all 3 control populations was >1 or <1, respectively, and statistically significant. Age and sex were also compared among the groups.

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The following breed predispositions were identified:

High-Risk	Low-Risk
Bichon frise	American bulldog
Brussels Griffon	American Staffordshire terrier
Cairn terrier	Australian cattle dog
Chihuahua	Australian shepherd
Jack Russell terrier	Basset hound
Japanese chin	Beagle
Lhasa apso	Border collie
Maltese	Boxer
Miniature pinscher	Chow chow
Miniature schnauzer	French bulldog
Pomeranian	German shepherd dog
Yorkshire terrier	Golden retriever
	Labrador retriever
	Siberian husky

Odds ratios also increased with male dogs, neutered dogs, and older dogs, although risk may decrease after 10 years of age. The mean age at discovery of the first CaOx urolith was 8.4 ± 2.8 years, with Brussels Griffons, Yorkshire terriers, and Pomeranians forming CaOx uroliths ≈1 year earlier.

… TO YOUR PATIENTS

Key pearls to put into practice:

1. Risk for CaOx urolithiasis increases based on breed, increasing age, and neutered male signalment.
2. Based on this study's results, annual screening for CaOx uroliths in high-risk breeds should begin between 5 and 6 years of age or sooner if additional risk factors (eg, persistent CaOx urolithiasis, family CaOx urolith history, breed predisposition to CaOx urolith formation at an earlier age) exist.
3. Annual screening for CaOx uroliths in high-risk breeds may help reduce the need for surgery, allow earlier interventions that prevent urolith recurrence, and allow earlier identification of predisposing comorbidities (eg, hypercalcemia, hyperadrenocorticism).

References

1. Low WW, Uhl JM, Kass PH, Ruby AL, Westropp JL. Evaluation of trends in urolith composition and characteristics of dogs with urolithiasis: 25,499 cases (1985-2006). *J Am Vet Med Assoc*. 2010;236(2):193-200.
2. Lekcharoensuk C, Lulich JP, Osborne CA, et al. Patient and environmental factors associated with calcium oxalate urolithiasis in dogs. *J Am Vet Med Assoc*. 2000;217(4):515-519.

Research Note: A Frozen Raw Diet & Tuberculosis in Cats

Six young cats from different households in the United Kingdom were diagnosed with *Mycobacterium bovis* infection, a member of the *Mycobacterium tuberculosis* complex. All were indoor-only cats and consumed the same commercial frozen raw feline diet. Seven subclinical in-contact cats from the affected households also had evidence of *M bovis* infection. Cats were presented with clinical signs including fever, inappetence, and severe weight loss and with diagnostic findings including pyogranulomatous lesions, abdominal mass, lymphadenopathy, and/or pneumonitis. Mortality rate was 83%. *M bovis* infection is zoonotic; commercial raw meat-based diets pose a significant risk for transmitting infectious pathogens such as *M bovis* to animals and their owners.

Source

O'Halloran C, Ioannidi O, Reed N, et al. Tuberculosis due to *Mycobacterium bovis* in pet cats associated with feeding a commercial raw food diet. *J Feline Med Surg*. 2019;21(8):665-666.

Commercial raw meat-based diets pose a significant risk for transmitting infectious pathogens to animals and their owners.