FOCUS Diabetes & Progesterone Levels: Finding the Connection

Canine diabetes mellitus (CDM) is considered insulin-dependent, and diabetic remission is rare. One exception occurs in intact female dogs with insulin resistance caused by progesterone excess (eg, during pregnancy or diestrus). Progesterone is known to inhibit insulin binding and to block the tyrosine-kinase–dependent glucose transport mechanism. It also causes an increase in growth hormone secretion. CDM during pregnancy may resemble gestational diabetes in women. This retrospective case study investigated CDM remission in diabetic female dogs with insulin resistance mediated by high progesterone levels. Out of 117 female dogs diagnosed with CDM, 72 were identified as intact. Of these, 57 were subsequently spayed, and 6/57 achieved CDM remission. The progesterone-related conditions for which resolution was associated with CDM remission included diestrus (n = 1), pregnancy (n = 1), ovarian remnant syndrome (n = 1), and pyometra (n = 3). Four had presented with severe diabetic ketoacidosis. Ovariohysterectomy (OHE) was performed 3–81 days following CDM diagnosis, and remission occurred 4–39 days after OHE. OHE was recommended for all intact female dogs that develop CDM, even when ketoacidosis was initially present or when several weeks elapsed from the time of diagnosis.

Commentary

The study suggests that diabetic remission can be achieved in female dogs with ovarian activity and that OHE is essential to achieving diabetic remission. Unfortunately, most CDM dogs that underwent OHE did not achieve remission. In the one patient that did achieve spontaneous remission after diestrus, diabetes signs returned permanently after the subsequent heat cycle. Considering the small sample size, for many intact female dogs, CDM will not resolve with OHE, but it should be recommended to maximize the chance of diabetic resolution.—*Jennifer Ginn, DVM, DACVIM*

Source

Diabetes mellitus remission after resolution of inflammatory and progesterone-related conditions in bitches. Pöppl AG, Mottin TS, González FH. *RES VET SCI* 94:471-473, 2013.

Necrotizing Cellulitis in a Dog

A spayed whippet (3 years of age) was referred and examined for a 3-day history of lethargy, inappetence, and progressive skin lesions. The dog had had an altercation with a cat 4 days before presentation; skin lesions consisted of 2 black, hemorrhagic, deep necrotic ulcers and edema with exudation on the ventral thorax. Skin cytology revealed bacterial organisms. The dog was treated with IV ciprofloxacin and ampicillin–sulbactam. A working diagnosis of necrotizing cellulitis and/or fasciitis was made. Culture revealed heavy growth of *Pasteurella multocida* (a small, nonmotile, Gram-negative coccobacillus commonly found in the nasopharynx of cats), and histological findings confirmed necrotizing cellulitis. The dog underwent surgical debridement and was discharged with 7 days of oral antibiotics. Ultimately, skin grafting was needed to close the surgical site. Six months postpresentation, the lesion was healed and cosmetically acceptable.

Commentary

Complications of *Pasteurella* spp infections in cats and humans are well recognized. Although this may be the first reported case of necrotizing cellulitis resulting from *P multocida* in a dog, it is unlikely to be the only case. Given that the organism is spewed from the oral cavity of cats when they hiss, any lesion (likely imparted by a claw) could be inoculated with *P multocida*. Clinical clues included the history and 2 ulcerated areas (likely teeth marks). Any rapidly progressing skin disease, regardless of whether it is associated with systemic signs of illness, requires aggressive diagnostic investigation: cytology, skin scrapings for *Demodex* spp, skin culture, and skin biopsy. Pending culture results and skin biopsy, cytology can help guide treatment.—*Karen A. Moriello, DVM, DACVD*

Source

Cat scratch-induced *Pasteurella multocida* necrotizing cellulitis in a dog. Banovic F, Linder K, Boone A, et al. *VET DERMATOL* 24:463-e108, 2013.

MORE ▶