Endocrinopathy Wipes Their Tears?

Case reports describing dogs or humans with common endocrinopathies have included keratoconjunctivitis sicca (KCS) as a finding. In this study, Schirmer's tear testing (STT) results from 100 healthy dogs were compared with those of dogs with naturally occurring hypothyroidism ($n = 12$), hyperadrenocorticism ($n = 16$), and diabetes mellitus ($n = 18$). The results of the STT varied from 12.3 to 14 in dogs with endocrinopathies and were 19.6 in normal dogs. The difference was statistically significant; however, at the time of the study, only a few dogs had frank KCS ($n = 3$ that also had diabetes mellitus and $n = 2$ that also had hypothyroidism). There was no correlation between success of treatment or severity of clinical signs, but there was a clinical trend toward lower STT values with duration of disease. Corneal sensitivity was measured in 12 of 18 dogs and was lower in diabetic dogs than in 12 dogs matched for breed, age, and gender. Dogs with experimentally induced hypothyroidism were not reported to have decreased tear production. Decreased corneal sensitivity in humans has been associated with diabetic neuropathy, and this is potentially a mechanism in dogs. Another possible explanation in diabetic dogs is the importance of insulin in lacrimal gland signaling. The authors recommend STT in dogs with known or suspected endocrinopathies.

COMMENTARY: Clearly, the take-home message from this study is that decreased tear production and KCS are underdiagnosed in dogs with common endocrinopathies. In addition, diabetic dogs may have decreased corneal sensitivity, leaving them vulnerable to corneal damage.—*Karen A. Moriello, DVM, Diplomate ACVD*

Reduced tear production in three canine endocrinopathies. Williams DL, Pierce V, Mellor P, Heath MF. ***J SMALL ANIM PRACT*** 48:252-256, 2007.