

## FOCUS Cleaned, Sealed, & Protected: Dental Sealants

This blinded study evaluated a barrier sealant used to prevent periodontal disease in dogs. The sealant, a nontoxic, low-viscosity liquid containing polymers, is applied subgingivally after a professional dental cleaning. It dries rapidly to provide a hydrophilic barrier film intended to block plaque and calculus within the sulcus while creating an aerobic environment; the latter is achieved via oxygen and water transport through engineered pores within the polymers. Plaque is blocked from entering the sulcus, decreasing calculus formation by blocking plaque deposition and creating an unfavorable environment for anaerobic bacteria.

Two groups of 15 beagles were evaluated over 30 days using a split-mouth design (1 side treated, 1 side control). On the sealant side, plaque was decreased by 30% and 50.5%, and calculus was decreased by 27.2% and 20% in groups 1 and 2, respectively. Gingi-

val inflammation was also assessed for product safety; no significant differences were noted between sides and no adverse effects were seen. Although the barrier sealant was designed to prevent plaque deposition in the sulcus, plaque and calculus reduction were also noted on the tooth crown. The results supported use of this barrier sealant as adjunct treatment in the prevention of periodontal disease in dogs.

### ■ Commentary

A gingival sealant (Sanos, allacem.com) is currently available to veterinarians to help prevent periodontal disease and has been shown to help reduce the build-up of plaque and calculus by as much as 50% and 27%, respectively. It is applied to the cleaned and dried gingival margin following a thorough scaling and polishing. A seal is created, preventing the build-up of plaque bacteria both below and above the gum line. Although daily tooth brushing

remains the most effective tool against plaque and calculus build-up, this product may benefit patients for which providing daily homecare is not a reasonable option.

—Mary Buelow, DVM



### ■ ■ Source

Evaluation of a hydrophilic gingival dental sealant in beagle dogs. Sitzman C. *J Vet Dent* 30:150-155, 2013.

## Corneal Pigmentation in Pugs: By Any Other Name...

Corneal pigmentation (CP) can occur from mechanical damage, secondary exposure of the cornea (eg, lagophthalmos), or immune-mediated disease. Information in a CERF report indicated that 21.26% of pugs that underwent CERF ophthalmic examinations had exposure keratopathy syndrome and pigmentary keratitis. However, corneal pigmentation was identified in 47/74 (64%) of pugs at the authors' clinic. To evaluate this discrepancy, a study was conducted of 295 pugs >16 weeks of age from 3 locations. Medical histories, AKC registration, and photographs were obtained as well as Schirmer tear tests (STT), corneal sensitivity tests, fluorescein stain uptake tests, and slit lamp biomicroscopy of the anterior segment of each eye. CP was found in at least 1 eye of 243 (82.4%) dogs and graded as absent, very mild (<2 mm), mild (<25% of cornea), moderate (25%–50% of cornea), or severe (>50% of

cornea). CP was found to be significantly less common in spayed dogs. Severity was not associated with AKC status. There were differences between sexes, with male pugs having significantly more moderate to severe CP. Values for the STT and tear film breakup time were significantly lower in pugs with severe CP. CP was significantly more common in dogs with fawn coat color. Other findings included a high prevalence of iris hypoplasia and persistent pupillary membrane. This was considered a *pigmentary keratopathy*, the new recommended naming, rather than pigmentary keratitis or corneal melanosis.

### ■ Commentary

CP has been considered a nonspecific sign resulting from various irritating stimuli (eg, mechanical abrasions, immune-mediated keratitis, abnormal eyelid conformation, trauma, and/or tear film disorder).

This study not only showed that the prevalence of CP in pugs is much higher than previously thought, but also that the pathogenesis of CP or pigmentary keratopathy may not be instigated by irritating ocular disorders. This study demonstrated that CP in pugs was not significantly associated with tear film deficiencies, ocular adnexal abnormalities, or severity of lagophthalmos. It is possible that CP in pugs is a genetic disease that can be exacerbated by other abnormalities (eg, tear film abnormalities, entropion, lagophthalmos).—Alexis Dubin, DVM, & Ellison Bentley, DVM, DACVO

### ■ ■ Source

Characteristics of, prevalence of, and risk factors for corneal pigmentation (pigmentary keratopathy) in pugs. Labelle AL, Dresser CB, Hamor RE, et al. *JAVMA* 243:667-674, 2013.

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