

Sampling Techniques for Cheilitis

Cheilitis in dogs refers to inflammation of the perioral area, particularly the lips. This study described the clinical, cytologic, and microbial findings in dogs with ($n = 56$) and without cheilitis ($n = 54$).

In affected dogs, common clinical findings included erythema, alopecia, crusts, erosions, hyperpigmentation, ulceration, and depigmentation. The most common underlying cause was a hypersensitivity reaction. The presence of lip folds was found to be a predisposing factor. Comparison of tape stripping, direct impression smears, and swabs rolled over the skin showed tape

stripping as the most reliable sampling method. Bacterial cultures revealed 100% growth in affected dogs and 93% in unaffected dogs. Common pathogens included *Staphylococcus pseudintermedius*, *Escherichia coli*, and *Pseudomonas* spp.

Commentary

Lip fold pyoderma is a common finding in dogs with prominent lip folds and in dogs with facial pruritus. Surgical intervention for pendulous lips is rarely indicated; clinical signs and patient discomfort can be managed with topical therapy. It is important to tell clients to be gentle and avoid aggressive manipulation of the area. Most dogs respond well to gentle daily washing with antimicrobial shampoos. Concurrent systemic antimicrobials are rarely indicated unless there is deep pyoderma and/or widespread *Malassezia* spp overgrowth.

This study also found that tape stripping is the superior method for sampling. In the commentary author's clinical experience, good specimens for examination are obtained as follows: Use clear acetate tape; use a clothespin to gently stain (Romanowsky) the strip but avoid the fixative step; and allow the strip to dry thoroughly before mounting it on a slide. For mounting, place a drop of immersion oil on the glass slide first, then gently mount the stained strip over the oil. Take care not to get oil bubbles beneath it. Uneven staining can result when the tape strip is collected then immediately placed on a glass slide.—Karen Moriello, DVM, DACVD

Source

Doelle M, Loeffler A, Wolf K, Kostka V, Linek M. Clinical features, cytology and bacterial culture results in dogs with and without cheilitis and comparison of three sampling techniques. *Vet Dermatol*. 2016;27(3):140-e37.

Predictive Model: Blood Glucose Concentrations

Blood samples from 6 healthy and 30 hospitalized dogs were examined to determine the effect of packed cell volume (PCV) on point-of-care glucometer (POCgluc) measurements in canine blood samples. Packed RBC samples from the healthy dogs were suspended with plasma to create PCVs ranging from 0% to 94%. POCgluc and PCV measurements from dilution and plasma cells were then analyzed for glucose concentration with a clinical laboratory biochemical analyzer (LABgluc).

Blood glucose values from LABgluc were similar at all dilutions. However, as

PCV decreased, POCgluc measurements were falsely increased; as PCV increased, POCgluc measurements were falsely decreased. This inaccuracy is believed to correlate with the degree of plasma displacement by erythrocytes. Increased erythrocyte volume in whole blood decreases the volume of plasma available for contact with reagents on glucose test strips in POCglucs. The absolute difference between POCgluc and LABgluc results increased as the PCV changed from 50%. POCgluc measurements for PCVs between 42% and 56% generally had ≤ 10 mg/dL deviation from LABgluc measurements.

A formula was developed to correct the POCgluc given a known PCV to predict patient glucose concentrations:

$$\text{Corrected POCgluc} = \text{POCgluc} + ([1.6 \times \text{PCV}] - 81.3)$$

Using this formula reduced the error resulting from hemodilution or hemoconcentration. Corrected POCgluc data had significant correlations with LABgluc

data in hospitalized dogs. Ideally, a point-of-care device would measure both hematocrit and glucose concentrations and use an internal correction formula before display.

Commentary

Changes in PCV outside of the reference range can result in falsely increased or decreased blood glucose measurements when POCglucs are used. Corrective formulas can be derived but would be specific to individual glucometers. It is also important to recognize that corrective formulas are often less accurate at extremes of hyper- or hypoglycemia.—Kirsten Cooke, DVM, DACVIM

Source

Lane SL, Koenig A, Brainard BM. Formulation and validation of a predictive model to correct blood glucose concentrations obtained with a veterinary point-of-care glucometer in hemodiluted and hemoconcentrated canine blood samples. *J Am Vet Med Assoc*. 2015;246(3):307-312.