Vetpath is a specialist veterinary laboratory dedicated to providing our clients with the finest laboratory diagnostic service. A team of veterinary pathologists and medical scientists with extensive experience in veterinary diagnostic pathology forms the core of the Vetpath team.

VNews

VETPATH LABORATORY SERVICES

SEPTEMBER 2010

DIAGNOSTIC TESTING OF THE ADRENAL GLAND

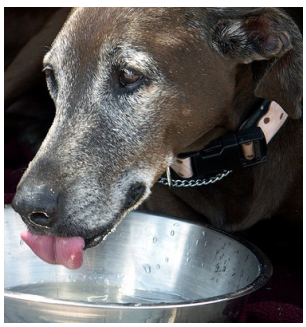
The choice of diagnostic test for assessment of the adrenal gland is dependent on a number of factors. The suspected disease, presence or absence of current illness and recent administration of medication should all be considered. A recent presentation at the ACVIM annual conference discussed the testing options available.

Basal cortisol

Measurement of the basal cortisol concentration is of limited diagnostic use in diagnosis of hyperadrenocorticism. However, a basal cortisol concentration may help to rule out hypoadrenocorticism. Some normal dogs have a low basal cortisol, but an adequate response to stimulation with ACTH (therefore a low cortisol concentration does not confirm hypoadrenocorticism). However, hypoadrenocorticism can be safely ruled out when the basal cortisol concentration is greater than 55 nmol/L.

ACTH stimulation test

The ACTH stimulation test can be used for diagnosis of both hyperadrenocorticism and hypoadrenocorticism.



Dogs with hyperadrenocorticism have an exaggerated response to ACTH administration due to the presence of large reserves of cortisol in the hyperplastic or neoplastic adrenal glands. The test is particularly useful in dogs with suspected concurrent illness or those with exposure to exogenous glucocorticoids (this is the diagnostic test of choice for iatrogenic hyperadrenocorticism). Unfortunately, the sensitivity of the ACTH stimulation test is lower than the low dose dexamethasone suppression test (approximately 85%) and the test cannot distinguish between pituitary dependent hyperadrenocorticism and a functional adrenal tumour.

The ACTH stimulation test is the gold standard test for confirmation of hypoadrenocorticism. Dogs with hypoadrenocorticism have no response to ACTH administration due to an absence of adrenal reserve.

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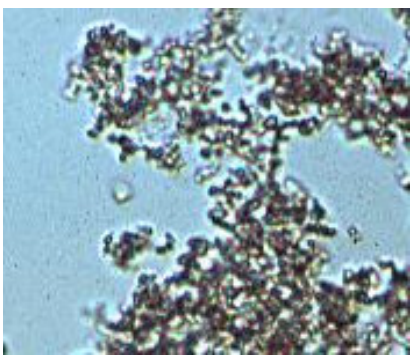
What crystal is this?



Source:

http://diaglab.vet.cornell.edu/clinpath/modules/UA-SED/crystal1.htm

The answer is below.....

Vetpath Laboratory Services welcomes feedback on all aspects of our service from couriers to lab results. Please feel free to contact us at 9259 3666 or email enquiries@vetpath.com.au

Low dose dexamethasone suppression test

The low dose dexamethasone suppression test is a sensitive (sensitivity of 95%) test used for diagnosis of hyperadrenocorticism. Administration of exogenous dexamethasone should cause suppression of endogenous cortisol for 24-48 hours in normal dogs. Measurement of cortisol at 8 hours post-dexamethasone administration reveals an absence of suppression in hyperadrenocorticoid dogs. An additional measurement of cortisol at 4 hours can sometimes assist in identifying pituitary-dependent hyperadrenocorticism. In this situation, cortisol is suppressed at 4 hours, then "escapes" with no suppression being seen at 8 hours.

The low dose dexamethasone suppression test is the test of choice for diagnosis of feline hyperadrenocorticism. Normal cats will suppress after dexamethasone administration, however hyperadrenocorticoid cats will not suppress at 8 hours post administration.

Urinary cortisol:creatinine ratio

The urinary cortisol:creatinine ratio is a useful screening test for hyperadrenocorticism. A voided morning sample is submitted. The test is very sensitive, but not specific. If the ratio is normal, a diagnosis of hyperadrenocorticism can be confidently ruled out. However, if the ratio is elevated, further testing must be undertaken to confirm the diagnosis of hyperadrenocorticism. Other causes of persistently elevated cortisol can result in a positive test (eg chronic stress).

Endogenous ACTH concentration

Measurement of endogenous ACTH concentration is used to distinguish between pituitary-dependent hyperadrenocorticism and a functional adrenal tumour. Concentrations can be high in dogs with pituitary dependent disease, and should be low in dogs with adrenal tumours. Note that an EDTA blood sample kept chilled and processed as soon as possible is required.

Please feel free to contact the laboratory for advice on testing of adrenal gland function.

Reference: Scott-Moncrieff, J. C. Overview of Adrenal Gland Physiology and Diagnostic Testing. In Proceedings: 2010 ACVIM forum, Anaheim California.

Reclassification of Staphylococcus intermedius strains

Staphylococcus intermedius was first isolated in 1976 and has since been identified as a phenotypically identical group of genetically different organisms.

A study published in the Journal of Clinical Microbiology discussed the use of molecular methods to reclassify some of the organisms in the S. intermedius group. The authors were able to identify four clusters of organisms including S. intermedius, S. pseudointermedius and two S. delphini groups (A and B) from 117 S. intermedius stains isolated from dogs, cats and humans. While these organisms were phenotypically identical, they were genetically distinct.

Vetpath has recently been identifying organisms in the S. intermedius group that we suspect to be S. schleriferi subsp coagulans, based on antimicrobial susceptibility patterns. Although, we are unable to differentiate other species within this group, the genetic variation is unlikely to be of significance when treating clinical infections.

Reference: Sasaki, T et al. 2007. Reclassification of Phenotypically Identified Staphylococcus intermedius Strains. J. Clin. Micro: 45 (9): 2770-2778.

The crystals are ....

Amorphous crystals.

"Amorphous" crystals appear as aggregates of finely granular material without any defining shape. Amorphous urates tend to form in acidic urine and may have a yellow or yellow-brown colour. Amorphous phosphates appear similar however tend to form in alkaline urine and lack colour. Generally, no clinical interpretation can be made based on the finding of amorphous crystals.

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