

**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.

# VN News

**JULY 2018**

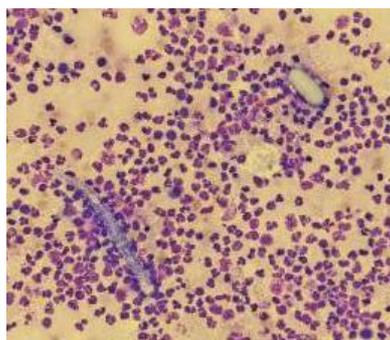
## Case of the month!

Diagnosing a rare disease is exciting for pathologists, and we thought we would share a recent “zebra” with you!

A 3 year old dog was presented to a specialist centre for hiatal hernia surgery. A cavitated para-oesophageal mass was detected during the procedure. Pus-like material was obtained on aspiration and sent to the laboratory for analysis.

Direct smears of the fluid were highly cellular and revealed a severe neutrophilic inflammatory response. Numerous ovoid basophilic structures consistent with nematode eggs were observed. Some of these structures were empty (figure 1), while others contained larvae (figure 2). Rare hatched larvae were also seen (figure 1). No other infectious agents were identified. The

interpretation of the cytology was severe neutrophilic inflammation with intralésional nematode infection.



**Figure 1:** A hatched larva (left) and an empty egg (right).



**Figure 2:** An egg containing a larva.

The morphology of the eggs and the location of the lesion were consistent with *Spirocerca lupi* infection. Adult worms are generally located within nodules in the oesophageal, gastric or

aortic walls. Dogs are infected by eating the intermediate host (usually a dung beetle) or a transport host (chickens, reptiles or rodents). The larvae migrate to the tissues and remain there for approximately 3 months. Eggs may be detected by faecal floatation 5 – 6 months after infection, although shedding can be intermittent.

Granulomas within the oesophageal wall or aneurysms of the thoracic aorta can result in coughing, dyspnoea and difficulty swallowing. Some dogs are asymptomatic. Exostoses that bridge between the ventral aspects of the thoracic vertebrae and oesophageal sarcomas are other complications.

*Spirocerca lupi* is rare in Western Australia and has been only reported in dogs that have lived or travelled in the northern part of the state. The patient in this case had lived in Port Headland.

We hope you enjoy the pics!

## Hypoadrenocorticism in brief

VNews will be presenting a two-part feature on hypoadrenocorticism. In this month's edition, the pathophysiology and clinical features of hypoadrenocorticism will be discussed. Diagnostic testing will be featured next month.

Hypoadrenocorticism (a deficiency of adrenocortical hormones) is typically seen in young to middle-aged dogs (range of 2 months to 14 years), especially female dogs, and occasionally in cats and horses. The disease may be familial in some breeds. In horses and foals, transient hypoadrenocorticism may occur in critically ill animals or in racehorses in training.

Disease may result in acute collapse and circulatory failure, or a more chronic disease with non-specific signs, including recurrent episodes of gastroenteritis, slowly progressive loss of body condition and failure to respond appropriately to stress.

Primary, secondary and iatrogenic hypoadrenocorticism can occur. Iatrogenic hypoadrenocorticism may occur in any species, and is associated with abrupt cessation of long-term corticosteroid or anabolic steroid administration.

Primary Addison's disease usually results from destruction of all three zones of the adrenal cortex, with subsequent loss of both mineralocorticoid and glucocorticoid secretion. Electrolyte imbalance results due to increased secretion of sodium and chloride, and retention of potassium. Bradycardia and a progressive decrease in blood volume due to electrolyte and fluid loss via the kidneys contribute to hypotension, weakness, dehydration and microcardia. Decreased gluconeogenesis due to lack of glucocorticoids and increased sensitivity to insulin contribute to hypoglycaemia. In some dogs, there is increased ACTH release due to a lack of negative feedback on the pituitary, resulting in hyperpigmentation.

In dogs with secondary hypoadrenocorticism (due to pituitary dysfunction) glucocorticoid deficiency only results, as aldosterone secretion is principally controlled by plasma concentrations of renin and potassium, not ACTH. A subset of dogs with primary hypoadrenocorticism develop selective glucocorticoid deficiency, causing "atypical" hypoadrenocorticism. These dogs show similar clinical signs to those with typical hypoadrenocorticism, but electrolyte abnormalities are not present, though may develop later if disease progresses.

Next month: Diagnostic testing.



## DGGR lipase

The lipase assay performed at VETPATH routinely for dogs and cats uses DGGR as the substrate. In dogs and cats, the DGGR lipase activity has been found to have excellent agreement with patient side tests. The DGGR lipase test is included in canine and feline profiles at no extra cost, and can be requested as a stand-alone test.

As with any diagnostic test, the DGGR lipase should always be interpreted in light of supporting clinical signs.

**References:** JVIM 2014; 28:863-870, JVIM 2013; 27:1077-1082, JVIM 2018; 32: 658-664.



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