

Adrenocortical Disease in the Ferret

Adrenocortical disease is a common endocrine disorder that affects one or both adrenal glands in middle-aged to older ferrets. The adrenal glands are a pair of organs that lie next to the kidneys and produce many important hormones including sex steroid hormones. In ferrets, enlargement of one or both of these glands will lead to an overproduction of mainly sex steroid hormones. Enlargement of the adrenal gland may either be due to an adenoma (benign tumor), adenocarcinoma (malignant tumor), or adrenocortical hyperplasia (increased size).

What causes adrenal disease?

The exact cause is unknown. It is speculated that neutering at an early age may play a role in causing the adrenal glands to assume the role of producing sex hormones when the primary producer is removed. Other causes being investigated include diet, genetics, and light/dark cycle.

What changes will I see in my ferret?

The most common sign of adrenal disease is hair loss. Female ferrets will often have an enlarged vulva, which may be associated with a mucoid discharge. Male ferrets may also have difficulty urinating, or an inability to urinate due to enlargement of the prostate. The prostate gland will increase in size secondary to the rise in sex steroid hormones. As the prostate enlarges, it compresses the urethra, a tube which connects the urinary bladder to the penis. Intense itchiness and scratching is also seen in some ferrets. Less commonly neutered ferrets may exhibit sexual behavior.



How can adrenal disease be diagnosed?

A diagnosis is made based on the combined results of many different tests.

- The history provided by the owner, with the appropriate clinical signs and physical exam findings can be highly suggestive of adrenocortical disease. However, other tests are strongly recommended prior to initiating therapy.
- A blood test should be performed to evaluate your ferret's overall health as well as to determine the severity of the disease. Concurrent disease, such as insulinoma, another common ferret disease, may also be discovered with this test.

- Radiographs (x-rays) are performed to evaluate your ferret's general health status. Abdominal ultrasound can detect and measure the enlarged adrenal glands.
- Finally a ferret adrenal endocrine blood panel can be sent to the University of Tennessee, which will indicate which hormones, if any, are elevated. No single test result is evaluated by itself. The above tests should be used together to evaluate what is best for your ferret.

How can adrenal disease be treated?

Adrenocortical disease can be treated in two ways: surgical removal of the affected adrenal gland(s), or medical management.

After the appropriate diagnostics to ensure your ferret's overall health, surgery may be elected to remove the enlarged adrenal gland. This is currently the preferred treatment for adrenal disease. Prior to surgery, it is important to know which gland is enlarged and this can often be seen with ultrasound. This is important because surgical removal of the left adrenal gland is less complicated. The right adrenal gland is very close to the vena cava, a very large blood vessel. If both glands are affected, the left gland is usually removed while the right gland is partially removed.

If surgery is not a good option for your ferret, medical management may be chosen. Leuprolide acetate (Depo Lupron[®], TAP Pharmaceuticals) suppresses stimulation of the portion of the adrenal glands, which produces sex steroid hormones. There are currently no published studies on the use of leuprolide acetate in the ferret, and not all individuals respond to this drug. Treatment with leuprolide acetate generally involves a monthly injection for the life of the ferret.

Why should I treat adrenal disease?

- Advanced adrenal disease may be associated with some degree of bone marrow suppression and anemia.
- Prostatic enlargement in males can cause difficulty urinating or even urinary obstruction, two conditions with potentially deleterious metabolic effects.
- If an adrenal adenocarcinoma is present, it can spread to other parts of the body.

What changes will I see in my ferret after surgery?

A decrease in prostate size is variable, but usually takes 2-3 days. A swollen vulva will decrease in size within a few days to 2 weeks. It will take longer (up to a few months) for signs of hair regrowth to be observed.