Ferrets: Adrenal Disease

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The most common symptom of adrenal disease in ferrets is hair loss, usually starting at or near the base of the tail and progressing toward the head. Female ferrets with adrenal disease may appear to be in heat, with an enlarged vulva. Male ferrets may have difficulty urinating due to enlargement of the prostate, and some males demonstrate increased aggression or sexual behavior. Some ferrets will lose muscle tone and become weak and lethargic.

These symptoms are due to the production of sexual hormones by the adrenal glands. Specifically, the hormones produced are forms of progesterone, estrogen and testosterone. The adrenal glands in a normal ferret would not be producing sexual hormones. However, for a number of theorized reasons, well over 50% of the ferrets in the U.S. will develop clinically obvious adrenal disease as adults – generally between three and six years of age. The likelihood is that a genetic factor is involved, since the majority of ferrets in the U.S. are derived from the same breeding stock. The very early spay and neuter that is performed on these ferrets may also contribute to the incredibly high incidence of this (and other) diseases. These adrenal glands may be hyperplastic (enlarged), or be cancerous. The cancer may be termed a benign type (adenoma) or a malignant type (adenocarcinoma). Luckily, even with the malignant type, metastasis (spread outside of the immediate area) of adrenal tumors is uncommon. These abnormal adrenal glands may, however, in addition to producing the sexual hormones, be very invasive locally, and may grow into the blood vessels or internal organs in the adrenal area.

In male ferrets, adrenal disease may be acutely life threatening. This happens when the testosterone produced by the adrenal glands causes the prostate to

enlarge to the extent that the ferret cannot urinate. Both kidney damage and potential bladder rupture may result.

A tentative diagnosis of adrenal disease in ferrets is often made based on medical history and signs of illness. Routine blood tests are typically not diagnostic. Abdominal ultrasound, when performed by an experienced radiologist, can often identify which gland or glands are affected, as well as detect invasion of the adjacent blood supply.

A normal size adrenal gland on ultrasound, however, does not rule out the possibility that the gland is abnormal in function. Therefore, a blood test that measures the circulating levels of the three primary sexual hormones produced by the adrenal glands can confirm the existence of this disease when the clinical signs themselves are not definitive.

The preferred treatment for adrenal gland tumors or hyperplasia is usually the surgical removal of the affected gland(s). This is the only treatment that offers a cure for the disease. Blood work should be done prior to surgery to evaluate the ferret's overall health. Chest X-rays should be done, and if there is any concern about the heart, an echocardiogram (ultrasound of the heart) should also be performed.

There are several surgical methods used to remove the abnormal adrenal gland or glands. The right adrenal gland lies very close to a major blood vessel, which makes surgical removal challenging. Since the adrenal glands secrete more than just the abnormal hormones associated with adrenal disease, ferrets that must have both adrenal glands removed (which is fairly common) occasionally require medication following surgery. Blood tests performed both before and after surgery can determine if supplementation is necessary.

There are a variety of medical treatments available for ferrets with adrenal disease when they are not good surgical candidates. None of these medical

therapies will cure the disease itself, and the tumor may continue to grow. However, clinical signs can often be eliminated, giving the ferret a good quality of life. A commonly used and effective drug treatment option is Lupron Depot® (leuprolide acetate). Lupron Depot® is given by injection and can often reverse the signs for an average of four to eight weeks between injections. Unfortunately, it is an expensive medication. Other medications that have been used to treat adrenal disease with limited success include mitotane and melatonin. An implant of a medication related to leuprolide acetate is available in Europe and will hopefully be approved soon for use in the U.S.

Adrenal disease in ferrets is a common malady in domesticated North American ferrets. It has been stated, “If a ferret lives long enough, it will develop adrenal disease.” While this may be an exaggeration, there is no denying the fact that all ferret owners should be familiar with this disease. Fortunately, with the many options now available, adrenal disease can be usually be effectively controlled.

For more information on this subject, speak to the veterinarian who is treating your pet.