

Exogenous Hormone Exposure



When Should You Include Exogenous Hormone Exposure on the Differential List?

(Rule out common diseases first!)

- Alopecia non-pruritic +/- hyperpigmentation
- Vaginal or prepuccial discharge
- Behavioural signs of estrus in a spayed cat or dog
- Vulvar or prepuccial swelling & edema
- Mammary hyperplasia
- Stump pyometra
- Prostatic infection or cysts/male incontinence
- Sexual behaviour or penile barbs in a neutered cat



Severe alopecia on the side of the body.*

The risk of exogenous hormone exposure has been discussed starting over a decade ago. It remains an ongoing concern as physicians typically do not warn patients about the potential dangers of exposing pets to these hormones nor how best to avoid it. Cats and dogs less than 15kg are most at risk as they are more often cradled or held. Contact with clothing or bed linens can be a risk. Mists, sprays, creams and even patches have been implicated.

Client Communication

Raising the question of hormone exposure with the owner should be carried out with care given how personally intrusive it may feel. Gently emphasizing the important potential implications towards their pet's health without any judgement or necessity to know why someone may be using topical hormones can create a needed sense of psychological safety.

Diagnostic Imaging to Consider

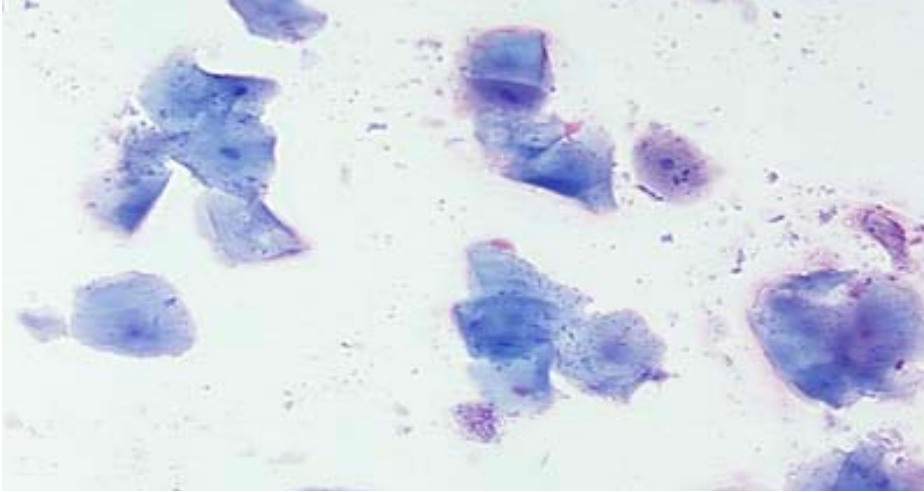
Abdominal ultrasound or other **advanced imaging (CT scan)** can be utilized to look for obvious ovarian tissue, a retained testicle or a functional adrenal mass. Complete imaging of the urogenital tract should also be included. In general, adrenal gland neoplasia is far less likely in young patients (< 6 years of age) and reported as uncommon in dogs and rare in cats.



Blood Tests to Consider

- **CBC:** check for anemia and bone marrow suppression.
- **Chemistry** and **Total T4/TSH:** identify hormonal disturbances or organ involvement.
- **Urinalysis:** rule out infection or atypical cells
- **Antimullerian Hormone (AMH)** and **Serum Progesterone:** AMH comes from ovarian or testicular tissue. AMH is expected to be negative with exogenous hormone exposure. Progesterone is expected to be low with exogenous estrogen exposure. High progesterone levels could come from ovarian luteal tissue, adrenal gland neoplasia or exogenous sources. If a patient has been recently spayed or neutered one must wait at least one month post surgery prior to measuring AMH levels.
- **Serum Estradiol :** elevated levels can result from exogenous hormone exposure, estrogen producing testicular or adrenal gland neoplasia
- **Serum Testosterone:** elevated levels can result from exogenous hormone exposure, a retained testicles or adrenal gland neoplasia.





Vaginal or Preputial Cytology

Cytology is a *simple* and *affordable test* to document exposure to estrogen in a spayed/neutered patient. In health, estrogen exposure results in a monotonous pattern composed of 80-100% anucleate superficial cells in an intact female dog. In the queen one sees upwards of 40% superficial cells during follicular estrus. More than 20% superficial cells in a preputial smear was significantly associated with serum estradiol concentrations >40 pmol/L in dogs with estrogen producing testicular tumors.*

Additional Reading & References*:

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