

GENERAL PRINCIPLES ON CLINICAL APPROACH TO DIAGNOSING ABNORMAL OVARIAN FUNCTION IN THE DOG AND CAT

Ovarian function is best monitored in the dog and cat using a combination of serial vaginal cytology, a measure of estrogen impact on the vaginal epithelium, and serial serum progesterone concentrations, which are a measure of luteal function. Progesterone assay is widely available, and, in general, serum concentrations exceeding 1.0 ng/ml are considered evidence of luteal function in both species. Serum LH assay is not widely available, except for one ELISA kit available in the USA and Canada; measurement of this hormone is most useful in detecting absence of ovaries due to previous ovariectomy or ovarian dysgenesis when LH concentrations are high.

PRESENTING COMPLAINTS OF ABNORMAL OVARIAN FUNCTION

PRIMARY OR PERSISTENT ANESTRUS.

Primary or persistent anestrus may be caused by prior ovariohysterectomy, an abnormality of sexual differentiation with ovarian dysgenesis (such as 79, XXX in the dog or 37, XO in the cat), autoimmune orchitis, idiopathic cause that responds to cabergoline therapy (bitch), or inadequate photoperiod to sustain cycling (queen).

ESTRUS AFTER OVARIECTOMY.

Estrus after surgical ovariectomy, or the ovarian remnant syndrome, has been described in both the queen and bitch, though is more common in the queen. The diagnostic approach with ovarian remnants is to confirm presence of cornified vaginal tissue in the female showing estrous signs (to distinguish those from other behaviours') and to monitor or induce ovulation so as to achieve serum progesterone concentrations that confirm the diagnosis and that achieve luteal structures on the ovarian remnant to facilitate its identification at surgical exploration.

FAILURE TO CONCEIVE (INFERTILITY FOLLOWING NORMAL COPULATION).

Failure to conceive after normal copulation may occur with ovulation failure, which is detected using serum progesterone concentrations following mating.

SHORTENED INTERESTROUS INTERVALS.

Shortened interestrus intervals occur most commonly with premature luteolysis about one month after ovulation in the bitch. If premature luteolysis occurs following fertile breeding, progestational support will need to be provided for pregnancy maintenance. In some species, premature luteolysis has been linked to abnormalities of ovulation, suggesting that ovulation induction at a later estrus may be indicated.

PERSISTENT ESTRUS.

Persistent estrus is confirmed estrus (receptivity to mating with vaginal cornification) for more than 21 days in the bitch or more than 19 days in the queen. Causes of persistent estrus in the bitch and queen include follicular cysts of the ovary or functional granulosa cell tumors, both of which are detectable on ultrasound or surgical exploration of the abdomen. Some, but not all, follicular cysts of the ovary respond to medical attempts at ovulation induction.

Causes of Abnormal Ovarian Function in the Dog and Cat

Ovarian Disorder	Diagnostic Tools	Treatment
Previous ovariectomy	Serum luteinizing hormone (high)	None
Ovarian dysgenesis	Karyotype, ovarian histology	None
Autoimmune oophoritis	Ovarian histology	None
Persistent anestrus with normal ovarian tissue present	Response to treatment	Cabergoline, 5 µg/kg, per os, q 24 hrs, until 2 days after the onset of proestrus (4-34 days) (bitch)
Ovarian remnant syndrome	Cornified vaginal cytology while the animal exhibits estrus; serum progesterone >1.5 ng/ml after ovulation	Surgical excision; examine both ovarian pedicles for possible bilateral remnants
Ovulation failure	Serum progesterone fails to increase after estrus	GnRH, 25 µg IM (queen) or 50 µg IM (bitch); OR LH, 2.5 mg IM (queen) or 5 mg IM (bitch)
Premature luteolysis	Serum progesterone drops to baseline concentrations prior to normal term	Ally-trenbolone, 0.088 mg/kg/day per os until 2 days before estimated parturition date
Persistent estrus due to functional ovarian cyst	Persistent vaginal cornification (> 21 days)	GnRH, 25 µg IM (queen) or 50 µg IM (bitch); OR LH, 2.5 mg IM (queen) or 5 mg IM (bitch)

Persistent estrus due to
granulosa cell tumor

Ultrasound, excision biopsy Surgical excision