



Infertility in the Bitch

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Infertility in both males and females presents a possible multifocal problem, requiring the veterinarian to start by concentrating NOT on the presenting complaint (infertility), but gather information about the entire animal, so any analysis can be directed at locating the cause, allowing appropriate treatment to be instigated.

Female infertility in canines has a greater chance of being resolved than male infertility. However, it is important to realise that you can go through the whole process and still have no result at the end of tests and therapy might be attempted.

Nevertheless, when it happens to be your top show bitch, or that special female canine you want a pup from, to continue her line, one does feel that you don't want to leave any stone unturned. The process is not a shotgun testing / therapy trial but rather a step by step algorithm that you, as an owner, can choose to stop at any time. Hence, as costs can be of concern, you can monitor the process as well as carefully deciding how much you wish to spend and decide what level of testing and even therapy you wish for your dog.

Even though there is greater chance of success in treating an infertile female canine compared to a male, the list of causes of infertility is extensive:

- Renal Disease
- Subclinical Hepatic pathology
- Cardiac disease
- Metabolic issues
- Non-reproductive hormonal problems
- Internal Conformational problems
- Gastro-intestinal problems
- Endometriosis
- Bacterial infection - Canine brucellosis
- Anovulation
- Incorrect Timing - Mismanagement
- Poor Follicular Development
- Silent Heats
- Mummified Foetus
- Benign Endometrial growth
- Neoplasia - local or systemic Weight Issues
- Endocrinology Problems directed at the reproductive tract
- Exogenous Hormones - In Food or inappropriate use
- Inappropriate Exercise Program for fertility
- Chromosome abnormalities (ovarian dysplasia)
- Hermaphroditism

- Ovarian Cysts
- Drug Induced- anti-fungal, steroids, immunosuppressive drugs
- Mycoplasma & Ureplasma- higher incidence in infertile females
- Cystic Endometrial Hyperplasia
- Pyometra
- Canine Herpes Virus Infection (CHV)

MISCELLANEOUS

Despite such an extensive list, many can be eliminated by doing three things:

1. A thorough history taking
2. A complete physical examination
3. A Body-Profile Blood Panel

This is the beginning of the path to reversing infertility in both the male and female.

History taking involves finding the following:

1. Age of bitch
2. Age of first cycle
3. Frequency of subsequent cycles and regularity
4. Previous number of attempts to breed
5. Any previous litters
6. Types of mating(s) - proper tied, artificial insemination and if so what type
7. How was the timing of previous mating(s) performed- count from start of bleeding, bitch's behaviour, progesterone testing
8. Was pregnancy, or lack of it, confirmed by ultrasound? Any recording?
9. Diet
10. Exercise and kennelling situation
11. Vaccinations, worming and any previous illness or surgery
12. Previous Hormone Therapy
13. Has the male been tested?

The blood panel will examine many systemic issues, though at times such issues can be sub-clinical, therefore the blood may be normal, though the animal could be harbouring abnormalities. Fortunately, sub-clinical issues are less common, so accepting results on face value is reasonable if the animal is not showing any symptoms of disease on physical examination.

Once a thorough history has been examined, the physical exam completed and the blood panel analysed, construction of an algorithm for the patient can begin. Many researchers in the field

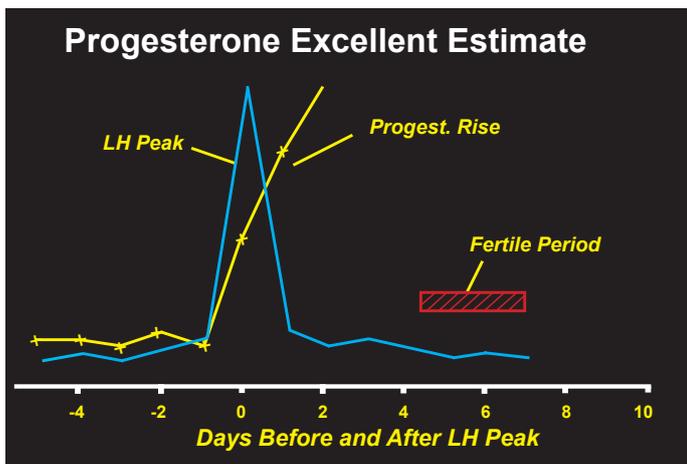
will then classify the infertile patient into one of four broad categories:-

- I. Normal Oestrus Cycles
- II. Abnormal Oestrus Cycles
- III. Failure to achieve a proper mating
- IV. Failure to carry a litter to term

All people working in the field of canine theriogeneology (reproduction) agree that the most common reasons for infertility in the bitch remains either incorrect timing of mating or an ineffectual mating/ insemination.

It is essential to realise that with a bitch that has had a history of infertility only fresh semen should be used for insemination. Many people turn to frozen semen in some peculiar belief that using this technology will enhance their chances of getting the bitch pregnant. Nothing could be further from the truth. Frozen or chilled semen should only be utilised on fertile females. This is not IVF, so fresh is best!

Certainly, if a bitch is having regular cycles, has no signs of systemic illness nor symptoms of other basic endocrine issues, many veterinarians will elect to wait and simply manage the next oestrus and ensure a proper mating takes place.



IT'S ALL IN THE TIMING

Timing of mating has been performed by many methods:

- a. Counting from first day of bleeding and mating around day 11 to 16.
- b. Behaviour of the bitch - how swollen her vulva becomes, when bleeding ceases, "flagging" towards the dog, acceptance of mating
- c. The ever reliable stud dog that's never missed a bitch (how many has he mated?)
- d. Vaginal Smears
- e. Hormonal assay - Luteinizing Hormone or Progesterone

Of these methods, hormonal assay is now the most reliable. Luteinizing hormone (LH) is, like all the higher hormones (that is, hormones produced by the pituitary gland), species specific and reliable testing is difficult because the LH rise can be sharp and short, therefore easily missed.

Progesterone assay is universally the gold standard for ovulation timing and calculation of the fertile period. Most people want a number that needs to be reached and then they should mate.

In fact, the "number" varies because not every bitch rises at the same rate. The singularly most important date to establish is the day a bitch's progesterone commences to rise off her baseline. The problem is that this can take multiple tests (in some females over six tests) so people become impatient and also become cost conscious.

If you do get a rise of progesterone off baseline then the fertile period starts four to five days after the rise and usually lasts between 4 to 6 days. If the bitch has already risen then I would mate her 48 hours after she reaches 15nmol/l, repeat mating every 48 hours for a total of three matings, as a best guess of when to mate. However, testing should continue to ensure the rise is sustained.

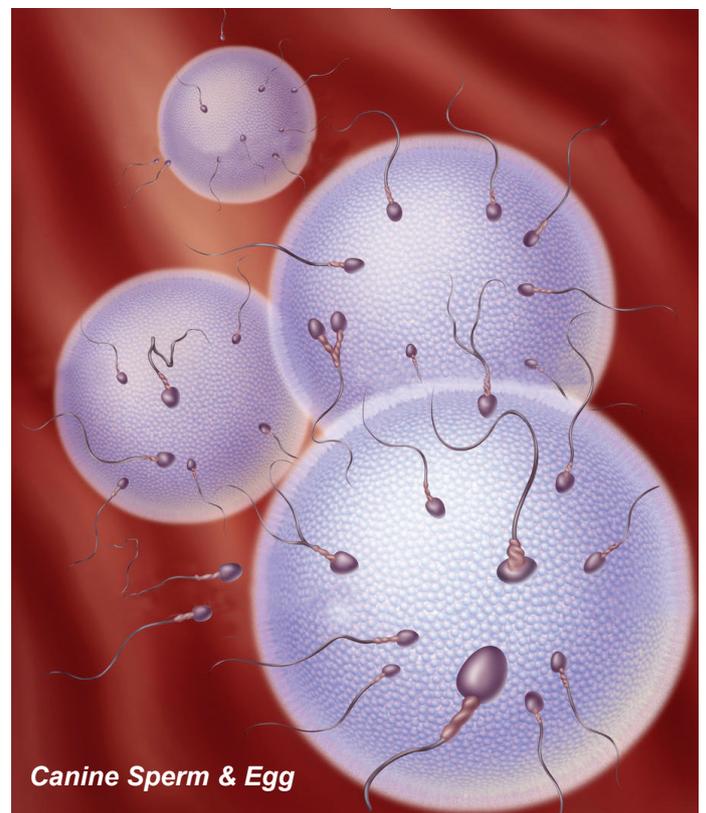
CONCLUSION

Infertility in the bitch can have one or more of multiple causes. Each case requires careful analysis of history. Once this occurs an algorithm can be developed which targets the areas of concern in each individual case.

You will need to understand why your veterinarian is recommending a particular course of action and then make a decision; your choices come down to one of three scenarios:

1. Whether it's best to proceed, which may involve blood tests, ultrasound and even surgical exploration and biopsy
2. Leave the dog as she is and hope for the best next cycle should you decide to mate her again
3. Or desex your girl to ensure her long-term health.

Notes taken from the Dog Breeder & Enthusiast Information Seminar (Lecture 5) conducted by Dr Robert A Zammit BVSc from Vineyard Veterinary Hospital



Canine Sperm & Egg