

Canine Pyometra

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Pyometra is a significant disease affecting our breeding and intact bitches, yet many breeders are under-informed about this condition. It is **not** a simple infection of the uterus that can be treated with antibiotics, and it can cause kidney damage and death if not promptly treated. This article will dispel the myths and explain the causes and treatment options for canine pyometra.

Pyometra (pyo = pus, metra = uterus) is a **secondary infection** overlying the primary condition of Cystic Endometrial Hyperplasia (CEH). CEH is an abnormal endometrial (lining of the uterus) condition that occurs after repeated exposure to estrogen and progesterone, as occurs during the normal cycle of an intact bitch. CEH may occur without clinical signs of disease, but can result in decreased fertility.

While the bitch is in season, the cervix relaxes and allows bacteria from the vagina to enter the normally sterile uterus. Healthy bitches can handle these bacteria and destroy them so they do not cause disease. In bitches with CEH, the bacteria (most commonly *E. coli*) readily colonize the abnormal uterine lining, causing infection. As the bitch's hormonal profile changes after her season, the cervix closes, trapping these bacteria and allowing them to proliferate and fill the hollow uterus with pus.

In some bitches, the cervix opens again, and drainage of the pus occurs. This is known as an "open" pyometra, as the draining pus is visible to the owner. An open pyometra is associated with systemic disease, although not as severely as with bitches with a closed pyometra.

When the cervix does not open, it becomes distended with pus and results in septicemia (bacteria in the bloodstream). This is known as a "closed" pyometra, and the cause of the bitch's illness may not be readily observable because there is no drainage from the vulva. Symptoms include fever, depression, increased white blood cell count, and kidney damage. Diagnosis is usually accomplished via abdominal ultrasound to demonstrate a distended uterus, and bloodwork showing an increased white blood cell count and high kidney values. Abdominal palpation is not recommended because it can result in rupture of the fragile, infected uterus, and cause spillage of pus into the abdomen. X-rays can sometimes show the distended uterus, but are not as reliable as ultrasound. With a bitch that has been bred and may be pregnant, abdominal ultrasound is the preferred technique to differentiate pregnancy vs. pyometra as the cause of the enlarged uterus.

Pyometra, whether open or closed, occurs most commonly eight weeks after the bitch's season, when the uterus is under the influence of progesterone. Bitches receiving estrogen for pregnancy termination are at increased risk. There is no breed disposition, and although older bitches are more prone to pyometra, it can occur as early as after a bitch's first season. The incidence is not increased in bitches that undergo false pregnancies.

Spaying is the preferred treatment for all bitches with pyometra. Although medical treatment can be attempted with an open pyometra, it **does not** address the underlying CEH condition. Additionally, after medical treatment, the bitch is predisposed to pyometra with each subsequent heat cycle. A rapid

diagnosis is needed for a good outcome with surgery, as uterine rupture, septicemia, and kidney damage are associated with a poor prognosis.

Antibiotic therapy alone will not effectively treat pyometra, because it does not expel the pus from the distended uterus. To attempt medical treatment, antibiotics must be paired with prostaglandins to contract the uterus to clear it of pus. Criteria for medical treatment vs. spaying includes the following: the bitch is of breeding age, is a valuable component of a planned breeding program, the cervix is open, and secondary disease such as kidney damage is not present. Again, treatment will not cure the underlying CEH, and the bitch should be bred on her next heat and then spayed after producing the desired offspring. Medical treatment of pyometra does not “cure” the bitch, but merely reduces persistent infection to a subclinical level that may allow a pregnancy to occur.

In summary, pyometra is a serious medical condition affecting our breeding bitches. Although some breeders never experience it while maintaining a breeding program, it should always be considered as a differential diagnosis with an ill intact bitch. Prompt treatment is necessary to save the bitch’s life. We have a saying in veterinary medicine that emphasizes the severity of the disease and the need for quick action: “Never let the sun set on a pyometra.”

Reference:

Kustritz, Margaret V. Root. *The Practical Veterinarian: Small Animal Theriogenology*. Elsevier Science. 2003.