

Pyometra

Pyometra is defined as a bacterial infection of the uterus. Unfortunately, cases of pyometra are much more difficult to manage than a routine infection.

Contributing Factors

Pyometra is most often diagnosed within 1-12 weeks after the end of estrus ("heat").

Prevalence

Pyometra is most often seen in middle-aged females that have undergone numerous heat cycles during their lifetime. Some pets may not have any apparent heat cycles for several years however.

Clinical Signs

Clinical signs depend on whether or not the cervix is open. If it is open, pus will drain from the uterus through the vagina to the outside. It may be noted on the skin or hair under the tail or on bedding and furniture where the pet has been. Fever, lethargy, anorexia, and depression may or may not be present.

If the cervix is closed, pus that forms is not able to drain to the outside. It collects in the uterus causing distention of the uterus. The bacteria release toxins that are absorbed into circulation. These pets often become severely ill very rapidly. They are anorectic (not eating), very listless, and very depressed. Vomiting or diarrhea may be present.

Toxins released by the uterine bacteria affect the kidney's ability to retain fluid. Increased urine production occurs, and the pet drinks an increased amount of water. This occurs in both open- and closed-cervix pyometra.

Causes/Transmission

Infection in the lining of the uterus is established as a result of hormonal changes. Following estrus ("heat"), progesterone levels remain elevated for 8-10 weeks and thicken the lining of the uterus in preparation for pregnancy. If pregnancy does not occur for several estrous cycles, the lining continues to increase in thickness until cysts form within it. The thickened, cystic lining secretes fluids that create an ideal environment in which bacteria can grow. Additionally, high progesterone levels inhibit the ability of the muscles in the wall of the uterus to contract.

Other Causes of Pyometra

The use of progesterone-based drugs can cause pyometra. In addition, estrogen will increase the effects of progesterone on the uterus. Drugs containing both hormones are used to treat certain conditions of the reproductive system.

Entry of Bacteria into the Reproductive Tract.

The cervix is the gateway to the uterus. It remains tightly closed except during estrus. When it is open, bacteria that are normally found in the vagina can enter the uterus rather easily. If the uterus is normal, the environment is not well suited to bacterial survival; however, when the uterine wall is thickened and cystic, perfect conditions exist for bacterial growth. In addition, when these abnormal conditions exist, the muscles of the uterus cannot contract properly. This means that bacteria that enter the uterus cannot be expelled. The most common bacterium isolated is *E. coli*. This is a bacteria commonly found in feces. It is easy for a female pet to get feces on her vulva and enter her vagina and uterus.

Diagnosis

Pets that are seen early in the disease may have a slight vaginal discharge and show no other signs of illness. However, most pets with pyometra are not seen until later in the illness. Any very ill female pet that is drinking an increased amount of water and has not been spayed is always suspected of having pyometra. This is especially true if there is a vaginal discharge or an enlarged abdomen.

Pets with advanced pyometra have a marked elevation of the white blood cell count and often have an elevation of globulins (a type of protein produced by the immune system) in the blood. The urine may be very dilute due to the toxic effects of the bacteria on the kidneys and there may be signs of kidney failure in the blood work. However, all of these abnormalities may be present in any pet with a major bacterial infection.

If the cervix is closed, radiographs (x-rays) or ultrasound (sonogram) of the abdomen will often identify the enlarged uterus. If the cervix is open, there will often be such minimal uterine enlargement that the radiograph will not be conclusive. An ultrasound examination can also be helpful in identifying an enlarged uterus and differentiating that from a normal pregnancy.

Treatment

The treatment is to surgically remove the uterus and ovaries. This is called an ovariohysterectomy ("spay"). Pets diagnosed in the early stage of the disease are very good surgical candidates. The surgery is only slightly more complicated than a routine spay. However, most pets are diagnosed when they are quite ill so the surgery is not as routine as the same surgery in a healthy pet. Intravenous fluids are often needed before and after surgery. Antibiotics are given after surgery as well. Antibiotics alone will not cure the infection due to the massive amount of infection present.

Prognosis

The possibility of successfully resolving pyometra without surgery is extremely low. If a treatment is not selected and performed quickly, the toxic effects from the bacteria will be fatal. If the cervix is closed, it is also possible for the uterus to rupture, spilling the infection into the abdominal cavity. This will also be fatal.

Prevention

Spaying a female pet prevents pyometra. If the female is a pet, she should be spayed as soon as your veterinarian recommends it. If she is a breeding animal, she should be spayed as soon as her breeding career is over. Spaying a healthy pet is far safer than performing a pyometra surgery on a critically ill pet. In addition, the cost is far less for a routine spay than an emergency pyometra surgery in the unstable pet.