

## A Dog Uterine Infection

**Pyometra is a real danger for older, intact bitches.**

*D. Caroline Coile, Ph.D.*

The call came at 11 p.m. A friend of mine, Karen Brewer, had just moved to town, and she needed directions to the emergency veterinarian. It was Farah, her 10-year-old Saluki. I recalled that just the day before Karen was talking about how much fun Farah had that day running around her new yard.

We raced to the emergency clinic together. Karen filled me in on the way: That morning, Farah ate breakfast as usual. When Karen returned from work that evening, Farah seemed fine, running outside to play. At 9 p.m., she refused to come in, still outside hunting. At 11 p.m., Karen went to bring Farah in. She found her vomiting and barely able to walk, with diarrhea and a painful abdomen. By the time we got to the emergency clinic, Farah was totally unresponsive and in shock, and had a temperature of 104 degrees Fahrenheit.

It was the fever that made us recall she'd been in heat a few weeks earlier, which in turn made us all think of pyometra. An X-ray showed a fluid-filled body in the abdomen, very likely a pus-filled uterus. Emergency surgery was the only choice.

Farah never made it to the table. An autopsy confirmed it was pyometra.

What is pyometra?

Pyometra is an infection of the uterus. A 2001 Swedish study ("Breed Risk of Pyometra in Insured Dogs in Sweden" by Agneta Eganvall, et al, *Journal of Veterinary Internal Medicine*, 2001), using a veterinary insurance database, found that almost 24 percent of intact bitches experience pyometra by 10 years of age. The percentage is higher than average (as high as 54 percent) in some breeds, including the rough Collie, Rottweiler, Cavalier King Charles Spaniel, Golden Retriever, Bernese Mountain Dog and English Cocker Spaniel. Some breeds, such as the German Shepherd Dog and Dachshund, experienced lower than average incidence.

The incidence of pyometra increases as bitches age, beginning at age 4, with the chance especially high in bitches older than 7 years, and even more so in those that have never been bred. It's also seen more often in bitches of any age given mis-mating shots (injections of estrogen given shortly after an accidental breeding to abort the litter) or that have been given progesterone hormones to suppress estrus (heat).

Pyometra typically occurs in a bitch one to two months following her estrus. During this time, her progesterone levels are elevated, whether she was bred or not. The hormone progesterone does several things that act together to make conditions ideal for infection: it stimulates glandular secretions within the uterus, suppresses uterine contractions and inhibits the effect of infection-fighting blood cells in the uterus. The effects are cumulative, such that each estrous cycle results in more glands, inflammatory cells, and fluid or mucous in the uterus. If estrogen is administered (such as in a mis-mate shot) during this time, it's especially likely to result in pyometra.

Cultures of bacteria found in pyometras suggest they originate from vaginal infections, urinary-tract infections or fecal contamination. The bacteria enter the uterus and multiply. *E. coli* is found in up to 90 percent of cases ("Canine Pyometra: New Approaches to an Old Disease" by Susi Arnold, et al, 31st World Small Animal Veterinary Conference, 2006).

Pyometras are typically identified as either open or closed, the difference being whether the cervix is open or closed. If it's open, the bloody or pus-like contents of the uterus will drain through the vagina, giving the owner a clue that something is amiss. If the cervix is closed, which is common, the contents will be trapped within the uterus and no drainage will be seen.

The best prevention for pyometra is spaying, which removes the uterus from the body. Rarely, a spayed bitch can develop a stump pyometra if a bit of ovarian or uterine tissue remains after spaying. Its seriousness usually corresponds to how much tissue was left behind.

Warning signs

In cases of closed pyometra, the owner has to spot signs other than an abnormal vaginal discharge. According to the American College of Veterinary Surgeons, more than 50 percent of affected dogs will have some of the following signs: lethargy

depression  
lack of appetite  
excessive water intake  
excessive urination  
pale gums  
less frequently: vomiting, diarrhea, abdominal distention

Because many of these signs are subtle and could have other causes, unless the bitch has an open pyometra – or unless the owner remembers she was in season recently – pyometra may not be the first thing to come to mind.

Once suspected, pyometra isn't hard to confirm – especially if it's an open pyometra. If it's closed, the veterinarian will run blood tests to look for signs of infection and rule out other possibilities, and will take an X-ray or perform an ultrasound to visualize the pus-filled uterus.

#### Treatment

Once pyometra is diagnosed, it's considered an emergency. The bitch must be handled carefully to reduce the chance that the uterus will rupture, which greatly reduces the likelihood of survival. The dog should not be picked up by placing a hand under her abdomen, nor should she be allowed to jump. If the uterus ruptures (which it can do even without rough handling), or if the infection reaches a certain critical point, the bitch's entire system can become septic, meaning the infection and its toxins enter the bloodstream and move throughout the body.

The body can also react to overwhelming infection and inflammation by developing widespread systemic inflammation and organ failure.

The treatment of choice is immediate stabilization and spaying to completely remove the infected uterus. Special care is taken to prevent the uterus from rupturing during the procedure so the abdomen isn't contaminated with its contents. If the bitch is not already suffering from sepsis or another associated problem, she should have a similar recovery as is seen with a typical spay procedure. If she does have other problems, she may need further treatment in an attempt to save her life.

#### Breeding after pyometra

In the case of a valuable breeding bitch that has an open pyometra but is otherwise healthy, drug therapy may be tried using prostaglandin F<sub>2</sub> alpha (PGF<sub>2</sub>) alone (if more than 2 1/2 months have passed since her last heat) or PGF<sub>2</sub> along with a progesterone inhibitor (if less than 2 1/2 months have passed). PGF<sub>2</sub> causes the cervix to open and the uterus to contract, forcing out the infected contents.

The drugs are given daily for about five days, and the bitch may feel sick (vomiting and diarrhea) immediately after treatment. If the treatment works, it's advisable to breed her on her next season, because she is susceptible to pyometra in subsequent heat cycles. The risk is reduced if she is pregnant. Subsequent fertility may be lower than normal.

Pyometra is a deadly, but preventable disease. There's one final step in managing a brood bitch: Plan on spaying her when her career as a mother is over.

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