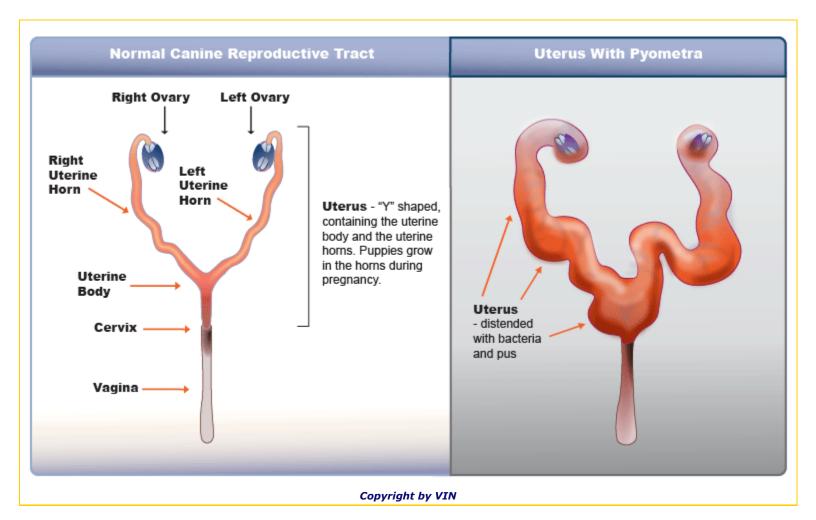# Pyometra

The word pyometra is derived from Latin "pyo" meaning pus and "metra" meaning uterus. The pyometra is an abscessed, pus-filled infected uterus. Toxins and bacteria leak across the uterine walls and into the bloodstream, causing life-threatening toxic effects. The uterus dies, releasing large amounts of pus and dead tissue into the abdomen. Without treatment death is inevitable. Prevention of this disease is one of the main reasons for routinely spaying female dogs.

Normal Canine Reproductive Tract

Right Ovary   Left Ovary

Right Uterine Horn

Left Uterine Horn

Uterus - "Y" shaped, containing the uterine body and the uterine horns. Puppies grow in the horns during pregnancy.

Uterine Body

Cervix

Vagina

Uterus With Pyometra

Uterus - distended with bacteria and pus

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CANINE PYOMETRA

What Might Make the Veterinarian Suspect this Infection?

Classically, the patient is an older female dog. Usually, she has finished a heat cycle in the previous 1 to 2 months. She has a poor appetite and may be vomiting or drinking an excessive amount of water. In the more usual "open pyometra," the cervix is open and the purulent uterine contents are able to drip out so that a smelly vaginal discharge is usually apparent. However, there is also a form called a closed pyometra where the cervix is closed. In these cases, there is no vaginal discharge and the

clinical presentation is more difficult to diagnose. These patients also tend to be sicker than those with open pyometra as they have retained the toxic uterine contents.

Lab work shows a pattern typical of widespread infection that is often helpful in narrowing down the diagnosis. Radiographs may show a gigantic distended uterus, though sometimes this is not obvious and ultrasound is needed to confirm the diagnosis.

A radiograph showing a closed pyometra. Photo courtesy of Alta Mesa Animal Hospital.

How does this Infection Come About?

With each heat cycle, the uterine lining engorges in preparation for pregnancy. Eventually, some tissue engorgement becomes excessive or persistent (a condition called cystic endometrial hyperplasia). This lush glandular tissue is ripe for infection; recall that while the inside of the uterus is sterile, the vagina below is normally loaded with bacteria. Bacteria ascend from the vagina and the uterus becomes infected and ultimately filled with pus. Effects on the uterine tissue accumulate with each heat cycle, which means pyometra is much more common in older females as they have experienced many heat cycles.

What is the Usual Treatment?

The usual treatment for pyometra is surgical removal of the uterus and ovaries. It is crucial that the infected uterine contents do not spill and that no excess bleeding occurs. The surgery is challenging, especially if the patient is toxic. Antibiotics are given at the time of surgery and may or may not be continued after the uterus is removed. Pain relievers are often needed post-operatively. A few days of hospitalization are typically needed after the surgery is performed.

It is especially important that the ovaries be removed to remove future hormonal influence from any small stumps of uterus that might be left behind. If any ovary is left, the patient will continue to experience heat cycles and be vulnerable to recurrence.

While pyometra surgery amounts to the same end result as routine spaying, there is nothing routine about a pyometra spay. As noted, the surgery is challenging and the patient is in a life-threatening situation. For these reasons, the pyometra spay typically costs five to ten times as much as a routine spay.

PROS:

- The infected uterus is resolved rapidly (in an hour or two of surgery).
- Extremely limited possibility of disease recurrence.

CONS:

- Surgery must be performed on a patient who could be unstable.

Is There an Alternative to Surgery?

In the late 1980s another treatment protocol became available that might be able to spare a valuable animal's reproductive capacity. Here, hormones called prostaglandins are given as injections to cause the uterus to contract and expel its pus. A week or so of hospitalization is necessary and some cramping discomfort is often experienced. The treatment takes place over the course of a week. This form of treatment is not an option in the event of a closed pyometra as described above, plus the dog must be bred on the next heat cycle. If she is not bred or does not conceive puppies on the next heat cycle, the recurrence rate of pyometra may be as high as 77%. After recovery from pyometra, the uterus is damaged and may not carry a litter normally (50-65% pregnancy rates with breeding have been published). Unless the dog has great value to a breeding program, it may not be worth it to attempt prostaglandin treatment.

PROS:

- There is a possibility of future pregnancy for the patient (though often there is too much uterine scarring).
- Surgery can be avoided in a patient with concurrent problems that pose extra anesthetic risk.

CONS:

- Pyometra can recur.
- The disease is resolved more slowly (over a week or so).
- There is a possibility of uterine rupture with the contractions. This would cause peritonitis and escalate the life-threatening nature of the disease.
- Breeding should occur on the very next heat cycle.

Prevention

Spaying represents complete prevention for this condition. Spaying cannot be over-emphasized. Often an owner plans to breed a pet or is undecided, time passes, and then they fear she is too old to be spayed. The female dog or cat can benefit from spaying at any age. The best approach is to figure that pyometra is highly likely to occur if the female pet is left unspayed; any perceived risks of surgery are very much out-weighed by the risk of pyometra.

FELINE PYOMETRA

The main difference between the feline and canine pyometra is that a cat with a pyometra appears surprisingly well despite the serious medical condition present. Usually the copious purulent discharge is noted but the cat is eating and grooming normally as if nothing much is going on. As with dogs, the pyometra can be open or closed and can be treated with surgery or with prostaglandins. Cats are usually in better general health when approaching surgery and tend to have a faster recovery than dogs.

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