

Pyometra

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Pyometra is a disease of the uterus most commonly seen in bitches (female dogs), but also seen in queens (female cats), rabbits, ferrets, and guinea pigs. Pyometra is an important disease to be aware of for any dog owner because of the sudden nature of the disease and the deadly consequences if left untreated. It has been compared to acute appendicitis in humans, because both are essentially empyemas within an abdominal organ.

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Pyometra in a dog

Cause of pyometra

Pyometra is a result of hormonal and structural changes in the uterus lining. This can happen at *any* age, whether she has bred or not, and whether it is her 1st or 10th heat (although it becomes more common as the dog get older). The main risk period for a female is for eight weeks after her peak standing heat (or estrus cycle) has ended.^[1] Normally during this period, the cervix, which was open during her heat, begins to close, and the inner lining begins to adapt back to normal. However, **cystic endometrial hyperplasia** (CEH) may occur at this time in some bitches.

Cystic hyperplasia of the endometrium (inner lining of the uterus) occurs as an inappropriate response to

progesterone. Bacteria (especially *E. coli*) that have migrated from the vagina into the uterus find the environment favorable to growth, especially since progesterone also causes mucus secretion, closes the cervix (preventing uterine drainage), and decreases uterine contractility.^[2] Bitches that have received estradiol as a mismating shot in diestrus are at risk for more severe disease because estrogen increases the number of progesterone receptors in the endometrium. 25 percent of bitches receiving estradiol in diestrus develop pyometra.^[3] Pyometra is less common in female cats because progesterone is only released by the ovaries after mating.^[4]

The condition of the cervix also determines the severity of the disease.

- If the cervix is open, the infected material can leave the body, and this is far easier and safer to treat. This is known as **open pyometra**.
- If the cervix is fully closed, there is no discharge from the vulva, and like in appendicitis, the uterus may rupture and pus escapes into the abdomen, causing peritonitis and possible rapid death. This is known as **closed pyometra**.^[5]

Symptoms

The most obvious symptom of pyometra is a discharge of pus from the vulva in a bitch that has recently been in heat. However, this is only seen with open pyometra. More general symptoms include vomiting, loss of appetite, depression, and increased drinking and urinating.^[6] Fever is seen in less than a third of bitches with pyometra.^[1] Bloodwork may show dehydration, increased white blood cell count, and increased alkaline phosphatase. X-rays will show an enlarged uterus, and ultrasound will confirm the presence of a fluid filled uterus.^[3]

Treatment

The most important aspect of treatment of pyometra is quick action. Bitches are often septic and in shock (see septic shock)^[6]. Intravenous fluids and antibiotics should be given immediately. The treatment of choice is an emergency spay^[4], to remove the infected organ, but as this prevents a bitch from breeding it is worth noting that some advances have been made in treating pyometra with longterm antibiotics and an agent to cause contraction of the uterus and expulsion of the pus.

Surgical treatment

Spaying (ovariohysterectomy) completely and promptly removes the infection, prevents uterine rupture and peritonitis, and of course prevents recurrence. It is the most effective and safest treatment.

Alternative treatments

There is another treatment option for bitches that the owner wishes to breed. Prostaglandin F₂-alpha (PGF₂-α) and longterm antibiotics can be used to expel the pus from the uterus and treat the infection.

PGF₂-α stimulates the uterus to contract, and requires at least three to five days to completely remove

the infected material.^[1] This treatment should only be used with an open pyometra, because otherwise uterine rupture may occur. Less than 30 percent of bitches with closed pyometras are successfully

treated in this way.^[3] Use of PGF₂-α should only be considered in bitches that are medically stable due

to the length of time treatment takes. These bitches should be bred at the next estrus cycle and then

spayed after parturition, because 70 percent will develop pyometra again in the next two years.^[3]

Stump Pyometra

Stump pyometra is a serious health condition that may occur in bitches that underwent

Ovariohysterectomy (spaying). In this condition, the remaining stump of the resected Uterus becomes infected and filled with a purulent fluid. The symptoms are similar to those of true pyometra.

References

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External link

- *Pyometra* from The Pet Health Library

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