

Pyometra

By Dr Michael Bell

What is pyometra?

Pyometra is an accumulation of puss within the uterus.

How does pyometra occur?

Pyometra is potentially a life-threatening condition associated with cystic endometrial hyperplasia that occurs normally in the 10 weeks after estrus occurs in the non-pregnant bitch. During this period the uterus is under the influence of progesterone produced by the ovary and this progesterone stimulates the growth and secretion of the glands lining the uterus and reduces the activity of the uterus muscle tissue. Cystic endometrial hyperplasia is an abnormal response of the uterus during diestrus that occurs when there is a high or prolonged production of progesterone by the ovaries and externally administered progesterone. This excessive progesterone level causes the uterus tissue to become cystic, fluidly, thickened and infiltrated by inflammatory cells. Fluid accumulates in the glands and the centre of the uterus and drainage of this fluid is hindered due to the inhibition of the uterine muscle to contract. This abnormal uterine environment subsequently allows bacteria to colonise hence causing pyometra to occur. Administration of oestrogen increases the risk of pyometra during diestrus hence possibly explaining the increased incidence of pyometra after oestrogens are administered to prevent pregnancy. Overall the risk of an intact bitch developing pyometra before 10 years of age has been reported to be as high as 23-25%. The infection caused by the bacteria colonising in the uterus is what causes the illness and death associated with pyometra.

Pyometra can be 'open' or 'closed'. With open pyometra the cervix is open and vaginal discharge is detected whereas with closed pyometra the cervix is closed hence there is no discharge of infected fluid and then a more serious disease. Affected animals may become dehydrated and septicemia can develop in untreated cases.

How are cases of pyometra detected?

As mentioned above cases of pyometra usually occur several weeks after estrous or following mismating injections or administration of estrogen and progesterone. Some present with a pussy or bloody vaginal discharge, while others have a fever, loss of appetite, lethargic, vomiting, increase in drinking and urinate more or may have weight loss. The cases with a closed pyometra more commonly have vomiting and diarrhea. On x-raying or ultra sounding the abdomen and fluid filled uterus is normally detected. When blood tests are taken the most common finding is elevated white cells and increased alkaline phosphatase.

How can case of pyometra be treated?

Medical treatment

Treating medically to remove the pus from the uterus is inappropriate for critically ill patients because to the removal is neither immediate nor complete. Where the dog is a valuable breeding dog and is metabolically stable medical treatment with 2-3 weeks of antibiotics together with Alizin and Estrumale can be considered especially if the pyometra is open. More than one series of prostaglandin injections may be needed. Owners must also

be aware of short term side-effects such as panting, vomiting, urination and straining may occur following the treatment, and serious complications such as uterine rupture and leakage are possible (although rare). The combinations of Alizin and Estrumale over five days has been reported safe and effective with few side effects with vulva discharge increasing and clinical signs beginning to improve within 24-48 hours of the injections.

Where medical treatment is successful mating should occur during the next estrus cycle. Also pyometra is expected to reoccur in 20% of cases treated medically during subsequent estrus cycles.

Surgical treatment

This is the preferred option and should be done as soon as possible once pyometra has been diagnosed. With surgery the dog is placed on intravenous fluids and a complete ovariohysterectomy is performed (i.e. removal of ovaries and uterus). The dog is also placed on antibiotics during and after surgery. After surgery pain relief is administered and the patients are monitored for the first 24-48 hours for shock, dehydration and electrolyte imbalances. Fluid therapy is continued after surgery until the dog is eating and drinking normally.

What are the chances of recovery?

Death usually occurs without surgical or medical treatment. Following medical treatment pyometra commonly persists or recurs after prostaglandin treatment. However 40-74% of bitches produce at least one normal litter after the treatment.

Prognosis following surgery is good if abdominal contamination is avoided and any kidney damage is reversed with fluid therapy and antibiotics. Death can occur when metabolic abnormalities are severe and unresponsive to appropriate treatment. Death following surgery runs at approximately 5-8%.