Canine Pyometra and medical management with Alizine®

C&T No. 5116

The CVE is very grateful to Fiona for her always obliging and generous response to repeated CVE requests for comments and articles for the Series and, in particular, for writing this article in response to a member’s request for a follow up on Fiona’s C&T No. 5043 published in our March 2010 issue.

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Pyometra in the bitch can be treated either surgically or medically or, in a number of cases, treatment with a combination of both therapies is very effective. Historically, pyometra has most commonly been treated by ovariohysterectomy (OVH). However, with the recent development of new pharmacologic agents and protocols including Alizine® canine pyometra can be very successfully treated medically. Furthermore, medical treatment of patients presenting with pyometra prior to surgery is an option in many cases to reduce the morbidity and mortality that can be associated with immediate surgical treatment. Spontaneous recovery from pyometra can occur after the onset of endogenous luteolysis and resultant uterine drainage. This is probably more common that what is reported, as many of these cases go undiagnosed. However, bitches left untreated can die and despite treatment, 4% of bitches still die.

Indications for surgical treatment of pyometra include bitches without significant reproductive value or bitches not intended for future breeding, emergency presentations such as uterine rupture or torsion concurrent with pyometra and older bitches – particularly those with significant cystic and degenerative endometrial changes detected on ultrasound. Bitches that are refractory or chronic cases that do not readily respond to medical treatment are also candidates for OVH. In the past, closed pyometra has been an indication for surgical management. However, uterine rupture is a very rare event and many closed pyometras are successfully managed with careful medical therapy. Generally, medical treatment is indicated for young bitches (<4 years old) which are intended for breeding.

After stabilization of the patient, the primary objectives of medical management of canine pyometra are to:

1. remove the effects of progesterone by inducing luteolysis or preventing progesterone from binding to its receptors.
2. promote the emptying/drainage of the pus-filled uterus by inducing cervical relaxation and myometrial contractions, and
3. inhibit further proliferation of bacteria and their release of endotoxins through the use of broad spectrum antibiotics.

Progesterone receptor antagonists or ‘antiprogestins’ are synthetic steroids that reversibly bind to progesterone receptors with a greater affinity than natural progesterone resulting in a decreased progesterone activity (Galac et al 2000) and reduction of bacteria adhering onto the surface of the endometrium (Arnold et al 2006). Alizine® (aglepristine) is a commercially available progesterone receptor antagonist. Aglepristine has minimal or no side effects and has been used very effectively to treat closed pyometras as it causes cervical opening with no or minimal uterine contractions. Aglepristine can be used alone to treat pyometra but, personally, I find it is most effective when used in combination with a repeated...
achieved, depending on the general health of the bitch.

The recommended 'low dose' protocol for treatment of pyometra with dinoprostone tromethamine (Lutalize®) is to start with 10µg/kg SC 3-5 times on the first day then 25µg/kg SC 3-5 times/d on the second day and then 50µg/kg SC 3-5 times/d until resolution. Side effects at these low doses are rare and are usually only seen at the start of treatment as bitches tend to develop a tolerance to the prostaglandinF -2α protocol (natural form: dinoprost tromethamine or synthetic form: cloprostenol) to potentiate luteolysis and stimulate uterine contractions.

It is important that regardless of what luteolytic agent/s you use to treat canine pyometra that they are combined with antibiotic therapy. The most commonly isolated pathogen from canine uteri with pyometra is E. coli. Therefore, initiation of treatment with a broad spectrum antibiotic such as amoxicillin (dose; 22mg/kg PO tid) amoxicillin and clavulanate (dose: 12.5-25mg/kg PO bid to tid) or cefazolin (dose: 22mg/kg IV or IM tid) is indicated. However, determination of the pathogen involved and its susceptibility is advised as infections with antibiotic resistant organisms or pathogens such as Psuedomonas aeruginosa can occasionally occur. If a bitch is not responding to treatment a culture and susceptibility on either the vaginal discharge or, ideally, a sample directly from the uterus. A uterine sample can therefore be used from 25 days after ovulation to treat pyometra through their anti-luteotrophic activity. However, these are also best used in combination with low incremental doses of prostaglandinF -2α.

It is important that the bitch is mated or inseminated on her first heat until the desired number of puppies has been achieved, depending on the general health of the bitch. The bitch should then be spayed before her next heat to prevent a recurrence of pyometra. Uterine regeneration after treatment of a pyometra is also important for the fertility of the bitch at her next oestrus. Short inter-oestrus intervals (<4 months) after treatment of a pyometra are common and often result in a decreased fertility of that heat. Therefore, prolongation of the anoestrous period with an androgen-receptor agonist such as mibolerone (dose: see manufacturer’s recommendation) starting 1 month after the cessation of treatment of the pyometra for a period of 2-3 months is recommended.

Following medical treatment the prognosis for future fertility and likelihood of the recurrence of a pyometra depends on a number of factors including the age and parity of the bitch, the degree of cystic endometrial hyperplastic (CEH) changes and the response to therapy. Pregnancy rates after treatment of a pyometra are variable (50-75%) as is the risk of a recurrence of pyometra at the subsequent heat (10-80%). However, the probability for a bitch previously treated for pyometra developing pyometra or becoming pregnant at a subsequent heat is the same as the probability for a naïve bitch of the same age, breed and parity. Importantly, bitches that do not respond to medical therapy within 5 days have a poor prognosis in regards to fertility and likelihood of pyometra developing at their next heat.

Other drugs which can be used to medically treat pyometra include dopamine agonists which are ergot derivative alkaloid compounds that have anti-prolactin activity and include cabergoline and bromocryptine. They can therefore be used from 25 days after ovulation to treat pyometra through their anti-luteotrophic activity. However, these are also best used in combination with low incremental doses of prostaglandinF -2α.

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New techniques are currently being developed to treat both closed and open pyometra with the non invasive, transcervical endoscopic catheterisation technique which is primarily used for intrauterine insemination. This technique involves catheterisation of the cervix and instillation of warm saline containing prostaglandinF -2α into the uterus. This treatment is repeated 2 days later if uterine fluid is detected on ultrasound. Promising results have been reported with resolution of pyometras within only 3-5 days (Verstegen, 2008). This is not a technique I have yet tried myself.

REFERENCES


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