

Pyometra- A life threatening disease in dogs

Nayana Devarajan

Abstract

Pyometra is defined as “pus in uterus”. It is one of the commonest uterine pathological conditions affecting female dogs. The etiological factor is recognized mostly as proliferating bacteria in uterine fluid. Most of the times the risk of getting pyometra is higher in non-bred or nulliparous animals. Although, condition primarily occur in bitches aged more than 6 years, even young bitches can contract with the condition. The ability of the disease to invade the body systemically makes it a challenge to treat and cure in clinical situation. Two options to treat pyometra include, medical therapy and surgical therapy, in which a definite treatment modality is surgical removal of both uterus and ovaries.

Introduction

Pyometra is the major reproductive pathology, targeting the reproductive capacity of an animal, with consequence both to its breeding performance as well as general health status. This systemic illness is characterised by inflammation of the uterus, accumulation of purulent exudate in the lumen of uterus which leads to a life-threatening condition. Based on the patency of reproductive tract, pyometra can be open-cervix or closed-cervix pyometra. Repeated exposure of progesterone in oestrogen primed uterus results in the development of cystic changes within the uterus, which ultimately get complicated with bacteria leading to pyometra in dogs. The circulated toxins and bacteria through the vascular system causes abnormal physiological, haematological and biochemical parameters. In India ovario-hysterectomy (OHE) is not a routine practice and hence dogs are prone to develop pyometra in their old age.

Nayana Devarajan

Ph.D. Scholar, Department of Animal Reproduction, Gynaecology and Obstetrics, College of Veterinary and Animal Sciences, Mannuthy, Thrissur, Kerala-680 651

Etiology

In the dioestrous phase of canine oestrous cycle, an inflammatory reaction may occur, and thus the uterus become prone to pyometra. This chronic progressive degenerative process is mediated by progesterone with the help of oestrogen. Afterwards bacterial organisms will proliferate inside the uterus. *E. coli* is the most frequently seen agent in canine pyometra.

Symptoms

- Anorexia
- Vomiting
- Diarrhoea
- Polydipsia
- Polyuria
- Lethargy
- Depression
- Fever

Closed-cervix pyometra exhibits more systemic signs than its counterpart, why because, there is no voiding of pus and bacteria from uterus if the cervix is closed. Pyometra is a medical emergency, which requires timely interventions to override the endotoxemia and sepsis.

Treatment

The treatment of pyometra mainly aims at minimising the effects of progesterone by luteolysis using prostaglandins, by using dopamine agonist (which caused functional arrest and luteolysis through inhibition of

prolactin) or by using drugs which prevents progesterone from binding to receptors.

Administration of systemic and local antibiotics were traditionally performed for canine pyometra. Supportive therapy with intravenous fluid plays a key role in pyometra management. Uterus can be drained by placing intrauterine catheter followed by antiseptic flushing. Antiprogestogen drug like mifepristone @ 2.5- 5mg/kg b.wt. twice daily orally can open up the cervix by antagonising progesterone activity. Antiprolactin drugs such as bromocriptine and cabergoline are effective in treatment of pyometra by reducing plasma progesterone levels. Synthetic prostaglandin analogue, Cloprostenol sodium administered @ 5 µg/kg body weight, s/c injection on every alternate day, till complete evacuation of uterus give effective recovery.

Even though medical management may be counted for preserving the reproductive capability of the bitch, surgical management by ovario hysterectomy is considered as the best choice of treatment.

Prognosis

In altered blood coagulation and disseminated intravascular coagulation with associated thrombocytopenia and anaemia, prognosis regarded as poor in pyometra. Animals with leucopenia and decreased body temperature had a poor prognosis in canine pyometra. Most of the observed deaths of

pyometra affected animals are caused by kidney failure and end stage kidney. Initiation of treatment for peritonitis, as early as possible can potentially increase chance of survival in bitches contracted with pyometra. Along with advanced age of animal, ovarian cysts and extensive cystic endometrial hyperplasia had been correlated with poor prognosis after medical management of pyometra. Animals suffered from severe sepsis with a higher venous oxygen saturation and lower base deficit have good prognosis.

For demanding increased survival rate, prevention of reoccurrence and for prediction of outcome an earlier identification of complications would be rewarded in canine pyometra.

Prevention

It is suggested that pregnancy is a major protective factor against the pathogenesis of pyometra and depicted greater incidence of pyometra in nulliparous animals.

Sterilisation of bitches before attaining six months of age is recommended, if the animal is not intended for breeding.

Complications of pyometra

Due to the growth, proliferation and death of the bacteria, endotoxins will be released which will form immune complexes and its deposition in glomerulus of the kidney causes glomerulo-nephropathy.

Pyometra associated hypocalcaemia and hyponatremia cause cardiac and circulatory disorders occurs. Depending on the chronicity of the condition, anatomical and physiological changes could happen in uterus as well as other visceral organs. Among the after effects of pyometra, the commonest complication being reported as peritonitis.

Conclusion

Pyometra in dogs is a medical emergency which requires clinical attention. It mainly affects old aged bitches which are non-bred or less frequently bred. Abrogation of uterine endometrium with cystic changes in a progesterone mediated fashion causes an enhanced proliferation of uterine glands and glandular secretion. Bacteria like *E. coli* will multiply and produce accumulation of pus inside the uterus. Though both medical and surgical therapy for pyometra is established, surgical management is resorted to as definite and preventive option. Prevention is mainly by early spaying or breeding which results in conception.