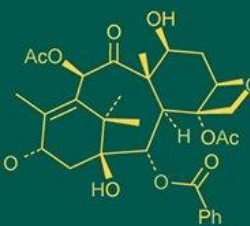
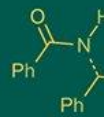
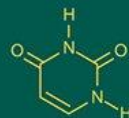


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A clinical case of pyometra in a persian cat

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Abstract

Accumulation of purulent material within the uterus is referred to as pyometra. This occurs during the luteal phase when a corpus luteum (CL) is present. A 3 year old female Persian cat with history of mating one month back was presented for pregnancy diagnosis to department of Veterinary Gynaecology and Obstetrics, CVSc, Proddatur. Ultrasonography revealed anechoic multiple pockets. Blood analysis showed that the level of AST, ALT were within normal range where as urea, creatinine increased and PCV and Hb% decreased. All the findings confirmed that cat had suffering from pyometra. Medical treatment was carried out with Mifepristone 5mg per body Kg B.wt p.o od for 5 days along with supportive care involving antibiotics. Once the animal got stabilized it was subjected to ovariohysterectomy.

Keywords: Pyometra, queen, ultrasonography, ovariohysterectomy

Introduction

Pyometra is not a common disease in cats its refer to “Pus-filled uterus” and common illness in adult intact female dogs. (Egenvall, 2001 and Hagman *et al.*, 2014) ^[3, 4]. It is a uterine inflammatory disease characterized by an ascending bacterial infection of the vagina and the presence of cystic endometrial hyperplasia (CEH), a condition resulting from progesterone-induced stimulation of the endometrium. Studies have reported that the disease occurs more frequently in cats older than five years of age compared to younger cats. Additionally, cats that have experienced one or more litters appear to be at a higher risk of developing pyometra (Johnson *et al.*, 2001) ^[6].

Depression, anorexia or inappetence, vomiting, diarrhea, lethargy, abdominal distension, polyuria, and polydipsia are typical clinical symptoms of pyometra (Jeena *et al.*, 2020) ^[5]. Cervical patency frequently results in a sanguineous to mucopurulent vulvar discharge in situations of open-cervix pyometra (Nak *et al.*, 2005) ^[8]. Accumulation of mucopurulent discharge mostly occurs during luteal phase of cycle in presence of corpus luteum. Incidence of pyometra in cats is much low (2.2%) when compared to dogs where it is around 20 percent (Hagman *et al.*, 2014) ^[4].

Pyometra occurs in middle age or older queens, 3-4 weeks after ovulation (spontaneous, induced, or mated), and could be life threatening. Pyometra comprises both bacterial and hormonal components, yet its precise pathophysiology is still understood. Although most study has been done on dogs, it is believed that the development in cats is the same. The uterine environment is favorable for microbial growth and pregnancy during the luteal phase (Xavier *et al.*, 2023) ^[13]. According to Hagman *et al.* (2014) ^[4], progesterone promotes endometrial gland development and proliferation, enhanced secretion, cervical closure, and inhibition of myometrial contractions. The present case deals with both medical and surgical management in a cat affected with pyometra.

History and Clinical examination

A 3 Year old Persian cat with a mating history of 30 days was presented to Dept. of VGO, CVSc, Proddatur. All the vital parameters were normal and cat was active without any apparent signs of illness. Ultrasonography was performed and surprisingly a few anechoic pockets (3 cm) were observed in uterus without any traces of fetuses inside the anechoic sacs.

Haematology			Serum Biochemistry		
Parameters	Value	Reference value	Parameters	Value	Reference value
Haemoglobin	8.8 g/dl	12-18	Total Bilrubin	0.5 mg/dl	1.2-2.1
PCV	25 percent	35-55	Total protein	6.1 mg/dl	5-7.8
RBC	4.5 Mil/cc	4.95-7.87	SGPT	43 IU/dl	8.3-53
WBC	17,500 cells/cc	5000-14000	ALP	26 IU/dl	12-65
Platelets	89,000/CC	211000-621000	Blood Urea	45 mg/dl	10-28
Neutrophil (%)	85	60-70	Creatinine	3.34 mg/dl	0.6-2.4
Lymphocyte (%)	15	20-30			
Monocyte (%)	2	5			

Cat was treated with Mifepristone @ 5mg/kg. B.wt p.o od along with antibiotic Amoxycillin Clavulonate @ 25 mg/Kg. B.wt p.o bid for 5 days. With 48 h after initiation of treatment greenish brown mucopurulent discharge was observed. After few days USG was repeated significant reduction diameter of anechoic sacs was observed and cat underwent ovariohysterectomy.

Anaesthesia

Muscle relaxant xylazine hydrochloride (Injection xylazine 1mg/kg BW and as a general anaesthesia ketamine hydrochloride 20 mg/Kg body weight) was intramuscularly administered. After 10 min Midazolam @ 0.2 mg/Kg b.wt was given through I.V. Preparation of surgical area was carried out after shaving and removing hairs. 70% alcohol scrubbed onto the skin around the surgery area, the area is then covered until surgery, since nothing must touch it once.

Surgical procedure

Body temperature, heart rate, mucous membrane (gum) colour, pulse quality, and depth of anaesthesia were continuously monitored throughout the procedure. A ventral midline incision was made along the length of the abdomen to perform a laparotomy. Following abdominal entry, the ovarian pedicles and uterine blood vessels were carefully ligated to achieve haemostasis. The ovaries, uterine horns, and uterus were then completely excised. Closure of the abdominal wall was performed using 1-0 PGA suture material, while the skin was apposed using a Horizontal mattress suture pattern with silk sutures.

Results and Discussion

Pyometra is a uterine inflammatory disorder commonly associated with cystic endometrial hyperplasia (Lucas *et al.*, 2000) [7]. Potter *et al.* (1991) [11] reported that the prevalence of pyometra increases with advancing age in sexually intact queens and occurs more frequently following parturition. In contrast, Agudelo (2005) [1] suggested that pyometra is most commonly observed in queens older than five years and is not associated with parity. However, these observations differ from the findings of the present case. The present study observed a relatively greater occurrence of pyometra in Bengal cats, which is in agreement with previous reports (Hageman *et al.*, 2014) [4]. Pyometra is predominantly diagnosed in middle-aged and geriatric queens, indicating that advancing age may be an important risk factor for the condition. The higher incidence in older animals could be associated with progressive alterations in uterine tissues and the increased likelihood of concurrent reproductive

abnormalities, including ovarian disorders and uterine tumors, which may contribute to disease development. However, the occurrence of pyometra in younger cats suggests that factors other than age may also play a role in its pathogenesis. Prior to treatment, the affected cat exhibited a reduced hemoglobin concentration, indicative of anemia. This hematological finding is consistent with observations reported in previous studies on feline pyometra (Hasan *et al.*, 2021) [12]. The observed anemia may be attributed to the migration of erythrocytes into the uterine lumen through diapedesis, in addition to reduced feed intake and suppression of erythropoiesis associated with toxemic conditions in severely affected animals (Carreira *et al.*, 2013) [9]. In the present case, the total erythrocyte count was reduced prior to treatment, indicating the presence of anemia, which is in agreement with previous reports in animals affected with pyometra. The decline in erythrocyte count may be attributed to the suppressive effects of circulating toxins on bone marrow activity. Furthermore, severe non-regenerative microcytic hypochromic anemia, particularly when accompanied by marked leukocytosis, may reflect chronic blood loss resulting from erythrocyte diapedesis into the uterine exudate, as well as a reduced lifespan of circulating erythrocytes and the development of iron deficiency (Dhabi *et al.*, 2009) [2]. In the present study, the hematological profile was characterized by absolute neutrophilia, lymphopenia, and monocytosis, while eosinophil counts remained within the normal range. Neutrophilia, often accompanied by a regenerative left shift, may be attributed to the accumulation of purulent material within the uterus, which stimulates the release and production of neutrophils through enhanced granulopoiesis. The observed lymphopenia is likely associated with stress-related physiological responses, whereas the increase in monocyte count may reflect the chronic inflammatory and suppurative nature of the disease process (Potheappan *et al.*, 2024) [10]. Neutrophilia is a typical feature in pyometra which could be due to influence of toxins in pyometra. Compared to dogs case fatality rate in cats is much high which could be attributed to less sensitivity to endotoxins (Hasan *et al.*, 2021) [12].

Pyometra could impair Liver and kidney functions which would be reflected in changes in LFT and KFT. In current study SGPT and ALP levels were within normal limits contrary to earlier reports (Hasan *et al.*, 2021) [12] of hepatocellular damage resulting reduced hepatic circulation or probably hepatic membrane damage However in current case increased blood urea nitrogen and creatinine might suggest renal dysfunction resultant of bacterial endotoxin.



Conclusion

The present study demonstrated that pyometra in bitches is consistently associated with significant hematological alterations, characterized predominantly by absolute neutrophilia, lymphopenia, and monocytosis, while eosinophil counts generally remain within normal limits. These changes reflect the severe inflammatory and stress responses associated with uterine infection and accumulation of purulent exudates. Hematological evaluation therefore serves as a valuable diagnostic and prognostic tool in the clinical assessment of canine pyometra. Furthermore, ovariohysterectomy remains the treatment of choice for successful management of pyometra, providing definitive removal of the source of infection and resulting in favorable clinical recovery when performed promptly. Early diagnosis coupled with timely surgical intervention is essential for improving prognosis and reducing morbidity in affected queens.

Conflict of Interest

None

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