International Journal of Science, Environment and Technology, Vol. 5, No 2, 2016, 774 – 780

ISSN 2278-3687 (O)
2277-663X (P)

Case Report

PYOMETRA AND ITS COMPLICATION IN BITCHES- A CASE REPORT

Anoop Kumar[1]* and R.R. Rohi, [2]Pooja Pawar, Pravesh Kumar and Rakesh Yadav
Department of Teaching Veterinary Clinical Complex,
Mumbai Veterinary College, Mumbai, M.A.F.S.U, NAGPUR -40065
[1]M.V.Sc. Scholar, Dept. of Gynaecology and Obstetrics, Orissa Veterinary College,
[2]Assistant Professor, Dept. of Surgery and Radiology
E-mail: anoopy4@gmail.com (**Corresponding Author*)

Abstracts: A five year old unspayed female Labrador dog was presented in Teaching Veterinary Clinical Complex, goregoan Mumbai with a history of dehydration, uterine discharge, distended abdomen, vomition, anorexia, Anuria, inability to walk and pyrexia. On clinical examination, the rectal temperature was recorded as 104.9^{o}F, with swollen vulva and pus discharge. Haemato – biochemical profiles revealed leucocytosis with neutrophila (78%), with slightly serum urea nitrogen (40.90 mg/dl), and high serum Creatinine (2.88 mg/dl). Radiographic examination revealed distended uterus with appearance sac-like pouches in the ventral and caudal abdomen which is suggestive of pyometra. Based on the history, clinical signs & symptoms, clinical pathology and radiography reports the condition was diagnosed as open cervix pyometra with acute renal failure. The pyometra was successfully managed by Ovario-hysterectomy followed by initiation of fluid therapy afterward following surgery for management of acute renal failure. Hence it is concluded that long standing pyometra leads to acute renal failure and arthritis which was managed with ovariohysterectomy followed by fluid, supplement diet and antibiotic therapy.
Keywords: Acute renal failure, Female dog, Open cervix, Pyometra, Radiography.

Introduction

Canine pyometra is a common reproductive disorder of intact, diastrual bitch affects nearly one fourth of all female dogs before they reach ten year of age (Baithalu *et al*, 2010). Pyometra usually occurs several weeks after a heat cycle. The infection begins as an abnormal increase in the number of glands in the uterus. The secretions of these glands provide an excellent environment for bacteria that enter the uterus from the vagina. Once the uterus is infected, it can become filled with purulent material and progress to become a life-threatening condition. Pyometra is the accumulation of pus within the uterine lumen, typically occurring during or immediately following a period of progesterone dominance. The elevated progesterone levels help to create the ideal conditions for infection and stimulate uterine glandular secretions within the uterus, which suppresses uterine contractions (Cox,

1970) and inhibits the effect of fighting blood cells in the uterus. The etiology of pyometra is mainly E.coli, Klebisiella, Pasterurella and Staphylococcus; most of organism is gram negative bacteria (Okano *et al,. 1998*). In approximately 90% of cases, Escherichia coli are the main causative agent. This bacterium produces endotoxins that are capable of initiating the cytokine cascade and the release of many inflammatory mediators. E. coli is thought to be the cause of the local and systemic inflammatory reactions associated with pyometra. It can be classified as open cervix or close cervix pyometra. The clinical manifestations of canine pyometra depend on the patency of the cervix. In open cervix pyometra, bitches are less systemically affected than in closed cervix pyometra. Common clinical signs include mucopurulent discharges, inappetence, depression, polydipsia, polyuria, lethargy, vomiting, diarrhoea and abdominal distension. Despite modern treatment the mortality in dogs due to pyometra is about 4% (Baithalu*et al*., 2010). The safest and most effective treatment is ovariohysterectomy (OHE) but purely medical treatment can be used in selected cases (Trasch *et al*., 2003) and sometime surgery in affected animals involves high risks because of complication such as renal failure and septic shocks leading to death in some animals (Okano *et al,. 1998).* Pyometrais responsible for renal failure due to deleterious effect of toxin on kidney So, the aims of the present study were to describe complications of the disease and managed surgically and finally clinically in bitch affected with open pyometra.

History and Treatment

A five year old intact d female Labrador dog was presented in Teaching Veterinary Clinical Complex, goregoan with a history of dehydration, depression, distended abdomen, vomition, inappetance and unable to support her weight on hind limbs and ticks also present on body Bitch suffered with vaginal discharge with high temp, totalleucocyticcounts, serum creatinine and blood urea nitrogen were elevated before operation (Table1). Radiographic examination revealed image of distended uterus with appearance of sac-like pouches which is suggestive of pyometra (Fig.1). Based on the history, clinical signs & symptoms, clinical pathlogy and Radiography reports the condition was diagnosed as open cervix pyometra.

The animal was treated Dextrose 5% 500 ml, Injection conciplex- 1 ml and injection Ampoxin@10mg/kg given intravenously diluted with DNS for five days. The bitch was also treated with, metaclopromide @ 2 ml and Ranitidine @ 2 ml i/m for 3 days for stabilization of patient andtreatment of acute renal failure condition. Keeping in view of recurrence of pyometra after cessation of treatment, it was planned for ovariohysterectomy. Ventral abdomen prepared aseptically for ovariohysterectomy. Dog was premedicated with Atropine

sulphate (0.04mg/kg B.wt) with inj Dexamethasone @0.15mg intramuscularly and injTriflupromazine @0.75mg/kg, administered intravenously. Anaesthesia was induction and maintained by administration of propofol@2mg/kgbwt at10 minute intervals. Placed the animal on operation table on dorsal recumbency. Perform the laparotomyskin incision from umbilicus caudally: the lenth of incision 3 to 6cm and sharp dissection with scaleped to difine white line and along the inside the abdominal wall and cut down the linea alba and exteriorized the uterine horn along with right ovary, apply three clamp technique, ligated with No. 1 chromic catgut and removed (Fig.2-3). Similarly, another side of ovary was removed. Now the uterine body was also removed anterior to cervix with three clamp technique after packing of abdominal cavity. The cut end of uterine body (stump) was sutured with inversion suturing pattern to prevent adhesion of cut edge other abdominal organ. Then Linea Alba is sutured with simple-interrupet or continuous suture pattern. And subcutaneous tissue suture similarly linea Alba Laparotomy wound was closed with routine surgical procedure by using chromic catgut No. 0. During the entire operative procedure, Ringer Lactate @ 500 ml was given intravenously. Post- operatively, the animal was given Ampoxin @ 20mg/kg i/m for 5 days and meloxicam @ 1.5 ml for 2 days. After ovario-hysterectomy on 4th of post – operative day in blood examination Total leucocyte counts, differential leucocyte counts, SGOT, SGPT, BUN and Creatinine values were elevated (Table .1) than started clinical treatment of renal failure with Inj ringer lactate 250ml, inj D25% 70ml and inj NS 500ml administrated intravenously and injVictofol 1ml, injRantac 1ml, injImferon 1ml and Neohepatex 1ml given intramuscularly and injConciplex 1ml, inj Pantoprazole 20mg and injCefotaxim 500mg administrated along with Normal Saline for 10 days .

Table 1: Haematological and blood biochemistry data of bitch during pyometra

Haematological and blood biochemistry data of bitch during pyometra					
BLOOD PARAMETER	1ST OF TREATMANT	3rd DAY AFTER SURGERY	5rd DAY AFTER SURGERY	8rd DAY AFTER SURGERY	11rd DAY AFTER SURGERY
Hb	11.8 gm/dl	10gm/dl	8.8 gm/dl	4.8 gm/dl	11.8 gm/dl
RBC	4.23million/cu.mm	3.98million/cu.mm	2.92million/cu.mm	2.66million/cu.mm	4.23million/cu.mm
PCV	22.6%	220.9%	15.8%	16.2%	22.6%
MCV	53.4fl	52.5fl	54.1fl	60.9fl	53.4fl

MCH	27.9pg	25.1pg	30.1pg	18.08pg	
MCHC	52.2%	47.8%	55.7%	29.65	
WBC	26000/cu.mm	57000/cu.mm	51300/cu.mm	23500/cu.mm	26000/cu.mm
Neutrophil	78 %	80 %	80 %	81 %	78 %
Lymphocytes	19%	18%	17%	15%	19%
Eosinophil	01%	01%	01%	01%	01%
Monocytes	02%	01%	02%	03%	02%
Basophil	00%	00%	00%	00%	00%
Platelet	455000/cu.mm	458000/cu.mm	485000/cu.mm	175000/cu.mm	345000/cu.mm
CLINICAL BIOCHEMISTRY					
SGOT	30 IU/ L	20 IU/ L	56.92 IU/ L	48.5 IU/ L	24 IU/ L
SGPT	24 IU/L	26 IU/L	34 IU/L	31 IU/L	30 IU/L
Blood Urea	40.90 mg/dl	181mg/dl	100.9 mg/dl	140 mg/dl	42.90 mg/dl
S.Creatinine	2.88mg/dl	9.7mg/dl	16.37mg/dl	10.6 mg/dl	1.68mg/dl

Result and Discussion

The bitch made uneventful recovery without complication and Routine haemato-logical and biochemical parameters were within normal physiological limits. Based on the case history, clinical signs and laboratory results the condition was diagnosed as open cervix pyometra with acute renal failure. The similar result was also reported by Jitpean *et al.* (2012)**.** Pyometra induces disturbed organ functions which are noted in the hematological and blood biochemical examinations. Classically there is leucocytosis, with neutrophilia and left shift in the differential white blood cell count (Børresen, 1980). Neutrophilia was the typical findings in the present report which is in agreement with the findings of Mahesh *et al*. (2014). The leukocytosis was characterized by neutrophilia indicated of severe infection and stress. Elevated serum urea nitrogen and serum creatinine was observed in the present report might be due to the deleterious effect of toxin of pyometra on kidney and the dehydration. The return of the BUN and creatinine to normal limits indicated better hydration and less demand placed on the kidneys. Decreased levels of the enzyme alanine aminotransferase (ALAT), due to inhibition of liver enzyme synthesis or hepatic membrane damage, and increased levels of aspartate aminotransferase (ASAT) are also associated with pyometra (Schepper *et al*,. 1987). Prevention of pyometra is difficult because of the normal aging changes in the uterus due to progesterone dominance during estrous. Intact bitches with short interestrous interval and aged bitches are more predisposed to pyometra because of the number of times the

endometrium is exposed to progesterone production. The changes that leads to pyometra are normal aging changes in the uterus so most intact bitches if they were to live long enough, would eventually develop pyometra. Pyometra is one of the canine bacterial infections potentially at risk of progressing into the systemic inflammatory response syndrome (SIRS) (Hardie, 1995). For this reason it is recommended that any bitch not being actively used for breeding or planned future breeding should be spayed before six months of age to prevent occurrence of this disease (Foster and Smith, 2006). Ovariohysterectomy is the most widely used method for sterilisation and the objective of this operation is not only sterilisation, but also prevention of venereal diseases such as arthritic, renal failure, peritonitis, hepatic disease associated with ascites.

Conclusion

This report conclude that bacterial toxins present in long standing pyometra ultimately affect the kidney as well as distension of uterus leads to pressure on bowels and bladder sequel to inappetence, constipation, vomition as well as dysuria, however these complication was resoved by early action with medical management initially for stabilization of patient following surgical intervention

References

[1] Baithalu, R.K., Maharana, B.R., Mishra, C., Sarangi, L. and Lipismita Samal, L. (2010). Canine Pyometra. *Veterinary World,* 3(7): 340-342.

[2] Børresen, B. 1980. Pyometra in the dog - a pathophysiological investigation. IV. Functional derangement of extragenital organs. *Nordic veterinary medicine* 32, 255-268.

[3] Cox, J.E. (1970). Progestagens in bitches: A review. *J. Small Anim. Prac.,* 11: 759.

[4] De Schepper, J., Van Der Stock, J. & Capiau, C. 1987. The characteristic pattern of aspartate aminotransferase and alanine aminotransferase in the bitch with the cystic endometrial hyperplasia-pyometra complex. Effect on medical or surgical treatment. *Veterinary research and communications* 11, 65-75.

[5] Foster and Smith (2006) Inc: File://A:\Pyometra and uterus infections in dogs.htm. Fransson, B., Lagerstedt, A.S., Hellman, E and Jansson, P. 1977. J. *vet, med.* A 44:417-426.

[6] Goodwin, J. and Schar, M .1989. vet.clin. North Am. Small animal.19:1239-1258.

[7] Hagman, R.(2000). New aspects of canine pyometra. Ph.D. Thesis, The Swedish University of Agricultural Sciences, Uppsala, Sweden

[8] Hardie, E.M. 1995. Life-threatening bacterial infection. *Compendium of continuing education for the practicing veterinarian* 17, 763-777.

[9] Jitpean, S., Hagman, R., Ström Holst, B., Höglund, O.V., Pettersson, A., Egenvall, A. (2012) Breed variations in the incidence of pyometra and mammary tumours in Swedish dogs. *Reprod Domest Anim.,* **47:**347–50.

[10] Mahesh, R., Devi Prasad, V, Devarathnam, J., Sumiran, N., Kamalakar, G. And Suresh Kumar, R.V. (2014). Successful Management of a Critical Case of Pyometra in a Bitch. A Case Report. *Research Journal of Animal, Veterinary and Fishery Sciences,* **2(8):** 21-23.

[11] Okano, S., Tagawa, M. & Takase, K. 1998. Relationship of the blood endotoxin concentration and prognosis in dogs with pyometra. *Journal of veterinary medical science* 60, 1265-1267.

FIG.1 Purulent vulvar discharge

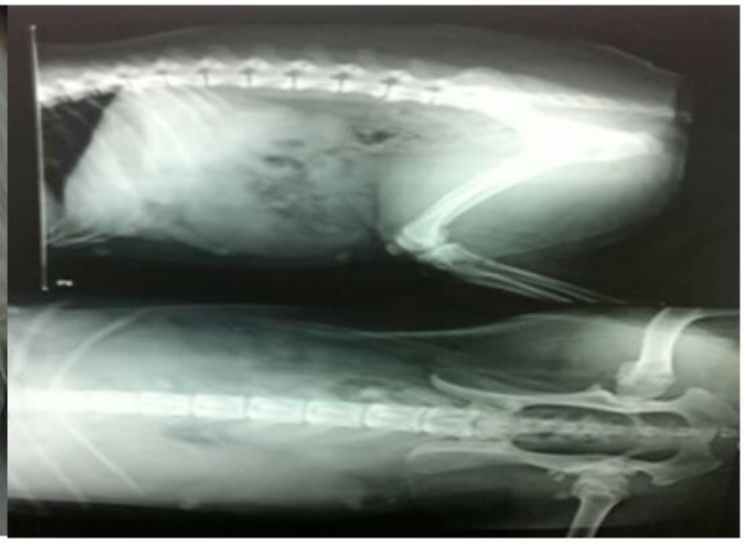

Fig 2. Pyometra appeared as horse shoe shaped under ultrasonographic examination

Fig 3. Uterine horn containing pusduring surgical intervention

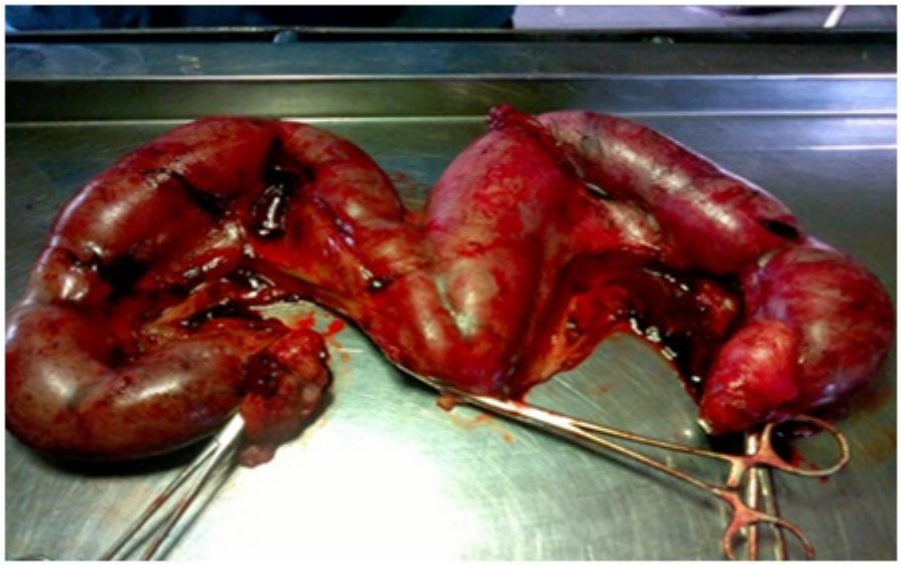

Fig. 4: showing Removed uterus along withovary

Fig. 5 showing complete healing of incision site.

*Received Mar 23, 2016 * Published April 2, 2016 * www.ijset.net*