

## SURGICAL MANAGEMENT OF CYSTIC ENDOMETRIAL HYPERPLASIA-PYOMETRA COMPLEX IN CANINES: STUDY OF TEN CASES

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### SUMMARY

Cystic endometrial hyperplasia Pyometra complex is a diestrus disorder of intact female dogs which occur due to continuous exposure of progesterone. Ten intact she dogs with variable age and parturition status brought to Veterinary Clinical Complex were diagnosed with cystic endometrial hyperplasia-pyometra complex based on history, clinical examination, haemato-biochemical findings and ultrasonographic imaging. Ovariohysterectomy is the treatment of choice and all the ten she dogs underwent the same under general anaesthesia. Postoperatively antibiotics and analgesics were administered parenterally and the animals showed an uneventful recovery. Early diagnosis and surgical management is essential to save the life of the animal.

**Key words:** Pyometra, Progesterone, She dogs, Uterus

The cystic endometrial hyperplasia-pyometra complex earlier called the endometritis-pyometra complex which is one of the most serious and most common uterine diseases in female dogs (Kida *et al.*, 2006). Pyometra commonly known as cystic endometrial hyperplasia-pyometra complex is a common uterine disorder of intact female dogs seen during the diestrus period under progesterone hormone influence coupled with bacterial infection. The action of progesterone on canine uterus consist of decreasing the local immune reactivity, promotion of secretion in the endometrial glands, a decrease in its motility and closing of the uterine cervix (Kempisty *et al.*, 2013). It is of two types: open and closed cervix pyometra out of which the latter one is life threatening and requires early diagnosis and surgical treatment to prevent death by septicaemia and toxemia (Kumar *et al.*, 2016).

Ten intact she dogs of variable age and parturition status were brought to Veterinary Clinical Complex with the complaint of anorexia, polydipsia, polyuria, recurrent vomiting and lethargy since many days. All the animals had the history of recent oestrus and clinical examination revealed a slightly distended abdomen Radiographic examination revealed distended fluid dense tubular uterine horns (Fig.1) in the ventral and caudal abdomen which was further confirmed by ultrasonography that disclosed a distended uterus with multiple cystic structures having anechoic to hypoechoic contents suggestive of cystic endometrial hyperplasia-pyometra complex (Fig.2). Haemato-biochemical examination revealed an elevated total leucocyte count with increased neutrophils, elevated blood urea nitrogen and serum creatinine levels but within the normal clinical limit (Table.1). Thus based on clinical, radiographic, ultrasonographic and laboratory examinations, all the she dogs were diagnosed with cystic endometrial hyperplasia-pyometra complex (closed cervix pyometra) and immediate surgical intervention was undertaken.

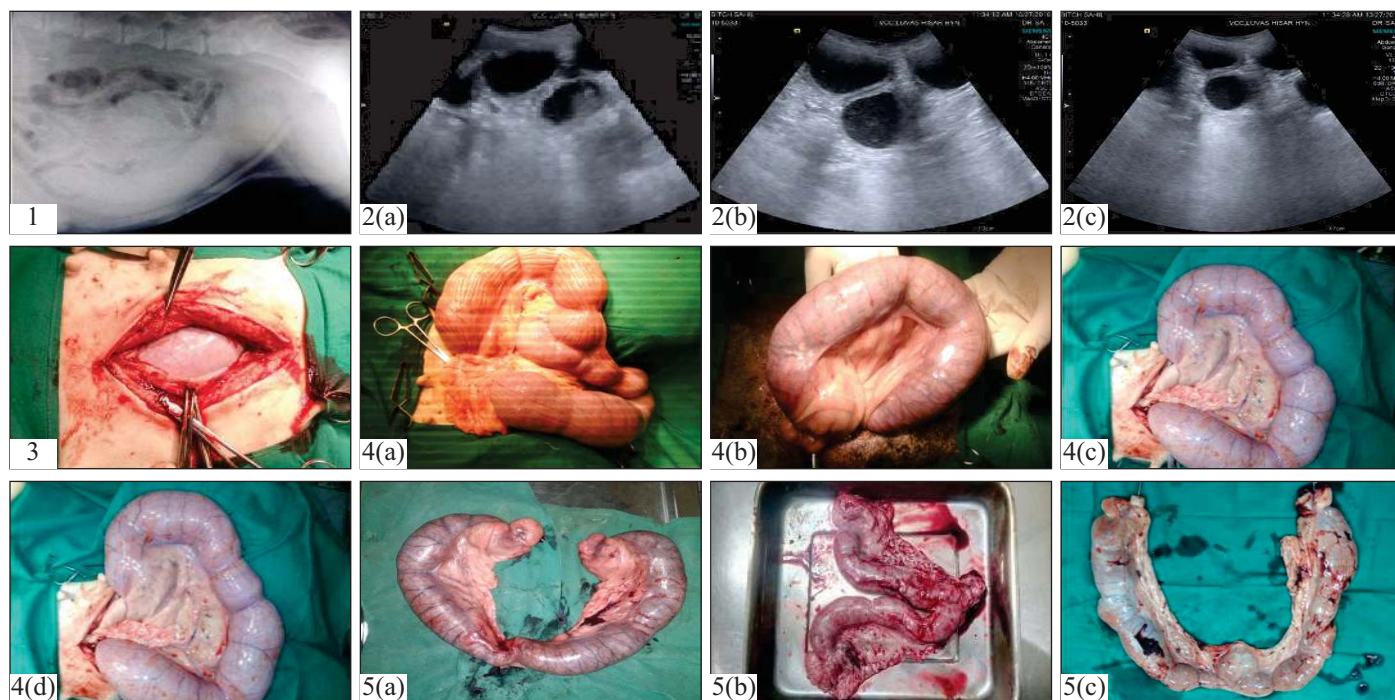
All the she dogs were fasted for twelve hours prior

to surgery, prepared for aseptic surgery and premedicated with Inj. Atropine sulphate @ 0.04mg per kg b.wt subcutaneous. Inj. Xylazine hydrochloride @ 1mg per kg b.wt was used for sedation and the anaesthesia was induced with Inj. Ketamine hydrochloride @ 5-10mg per kg b.wt and maintained with Inj. xylazine-ketamine combination intravenous for the rest of the procedure. A ventral midline skin incision was made, the linea alba and peritoneum was incised to enter into the abdominal cavity. The distended uterus was identified (Fig.3.), exteriorized outside the abdominal cavity (Fig.4) and ovariohysterectomy was performed as per standard surgical procedure (Fig.5). The laparotomy wound was closed in three layer suture technique.

Postoperatively antibiotic Inj. Ceftriaxone @ 20mg per kg b.wt and analgesic Inj. Meloxicam @ 0.3mg per kg b.wt was administered parenterally for five days along with per oral administration of multivitamin syrup.. Animals were maintained on intravenous fluids for the next three days. Daily wound dressing and application of fly repellent spray was also advised to the owner. Skin sutures were removed 10<sup>th</sup> day postoperative. All the she dogs recovered uneventfully without any complications.

Pyometra is defined as acute or chronic polysystemic, di-oestroul disorder of the adult female dog, characterised by hyperplasia of the endometrium and infiltration of the inflammatory cells and it may occur in all the layers of the uterus (Kempisty *et al.*, 2013). In the present case, the uterine walls were thick and hyperplastic and was filled with purulent material. Increased levels of progesterone after ovulation will cause growth of the endometrium and secretions into the lumen which is a good media for the bacterial growth (Kumar *et al.*, 2016). All the ten she dogs were had history of oestrus after which the clinical signs appeared suggesting diestrus disorder under the influence of progesterone. Decreased local immune reactivity and promotion of secretions in endometrial glands and ascending *E.coli* infections from the vagina will increase the inflammation of the organ and result in the present condition (Johnston *et al.*, 1985). The

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**Fig.1.** Lateral abdominal radiography showing distended fluid dense tubular uterine horns; **Fig.2 (a,b,c):** Ultrasonographic images showing multiple cystic uterus with anechoic to hypoechoic contents (arrow); **Fig. 3 :** The highly distended uterus observed after ventral midline incision (arrow); **Fig.4(a,b,c,d):** The pus filled uterus after exteriorization from the abdominal cavity; **Fig.5 (a,b,c) :** After ovariohysterectomy as a surgical treatment of pyometra in canine

**Table 1:**

Signalment and Haemato-biochemical values of the ten she dogs diagnosed with cystic endometrial hyperplasia pyometra complex

S.I NO:	Breed	Age	Hb (gm% )	TLC (x10 <sup>6</sup> /μl)	Neutrophils (%)	Lymphocytes (%)	BUN (mg/dl)	S.CRT (mg/dl)
1	Labrador	3yr	9.3	15.8	82	15	22.8	0.78
2	Non-Descript	4yr	10.11	22.4	78	17	26.3	1.3
3	Rottweiler	3yr	9.45	20.35	80	14	28.83	1.1
4	Labrador	5yr	11	21.85	86	12	35.23	1.4
5	Non-descript	5yr	11.33	17.65	72	21	42.21	0.87
6	Labrador	2yr	12.11	19.23	78	16	33.25	1.65
7	Labrador	3yr	10.3	14.66	74	22	37.89	1.32
8	Non-descript	5yr	9.5	18.22	84	12	33.21	1.72
9	Rottweiler	5yr	12.3	21.22	77	15	36.28	1.66
10	Rottweiler	4yr	10.35	22.33	81	15	45.56	1.78

incidence of pyometra is reported to be high in nulliparous animals (Niskanen and Thrusfield, 1998). Similar higher incidence in nulliparous she dogs were also observed in the present study. Ultrasonography along with radiography is helpful in the diagnosis of canine pyometra.

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