

CYSTIC ENDOMETRIAL HYPERPLASIA - OPEN PYOMETRA COMPLEX IN A FEMALE PUG

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ABSTRACT

A five-year old pug had the history of inappetance, polydipsia, occasional vomition and diarrhea. The vaginal examination revealed brown chocolate malodorous discharge. The uterine ultrasound showed hyperplasia and multiple distended circular hypoechoic and anechoic cysts filled with echogenic material in the uterine wall along with distended uterine horns containing large volume of cellular contents. Based upon ultrasonography, vaginal cytology and haemato-biochemical picture, the animal was diagnosed with cystic endometrial hyperplasia (CEH)-open pyometra complex. The bitch was treated with synthetic prostaglandin analog, methyl ergometrine and ceftriaxone. After one week, the bitch showed marked improvement with the absence of vaginal discharge, normal ultrasonographic report of uterus and normal haemato-biochemical picture. In conclusion, a synthetic prostaglandin analog along with methyl ergometrine can be used as the drug of choice for treating CEH-open pyometra complex without any adverse effect.

Keywords: Bitch, Cystic endometrial hyperplasia, Pyometra, Therapy Ultrasonography

INTRODUCTION

Cystic endometrial hyperplasia (CEH) is a pathological condition of compromised uterus of middle-age to old diestrous female dogs as a result of an abnormal response to chronic and repeated progesterone stimulation (Corrada *et al.*, 2006). From vagina, *E. coli* enters uterus and begins to proliferate inside cysts and crypts leading to the development of pyometra, hence, the condition known as CEH-pyometra complex (Batista *et al.*, 2016). The medical treatment of this condition involves repeated administration of a prostaglandin either alone or in combination with a prolactin inhibitor (Baithalu *et al.*, 2010). In addition, the use of methyl ergometrine helps to potentiate the stimulatory effects of prostaglandins and reduces their total dose. The present case report deals with the successful treatment of a case of CEH-

pyometra complex using cloprostenol and methyl ergometrine.

CASE HISTORY AND OBSERVATIONS

A five-year-old female pug with the history of lethargy, depression, inappetance, polydipsia, occasional vomition and diarrhea was presented. The bitch had the history of caesarean about four-year earlier, thereafter, the bitch never exhibited estrus. Following abdominal palpation, a mild distension was revealed and there was brown chocolate malodorous vaginal discharge. Other clinical parameters were within normal range. The ultrasonographic examination revealed irregular margins and thickening of uterine wall with multiple circular anechoic distended glandular cysts and echogenic cellular contents in the distended uterine horns (Figure 1). The vaginal cytology revealed a large number of degenerated neutrophils and vacuolated endometrial cells. The haemogram revealed leukocytosis and granulocytosis with normocytic normochromic anaemia (Table 1). Serum

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alanine aminotransferase, alkaline phosphatase, blood urea nitrogen and creatinine were elevated (Table 1). Based upon all these observations, the female pug was diagnosed with CEH-open pyometra complex.

TREATMENT AND DISCUSSION

A female pug was treated (s.c.) with cloprostenol (50 µg/kg b wt) on day 1st and 2nd of treatment and the dose was doubled from day 3rd to end of treatment (day 7). In addition, between day 3rd and 7th of treatment, the pug was administered methyl ergometrine (0.5 mg/kg b wt, i.v.), atropine sulphate (0.04 mg/kg b wt, s.c.), metronidazole (20 ml/kg b wt, i.v.), ceftriaxone (7 mg/kg b wt, i.v.), 10% dextrose (250 ml, i.v.), dexamethasone (0.5 mg/kg b wt), metoclopramide (0.2 mg/kg b wt, i.m.) and vitamin B-complex (2 ml, i.v.).

The ultrasonography observations of the uterus in the present case may be due to prolonged or repeated stimulation of progesterone hormone on endometrium. Previously, it was reported that an increase in plasma progesterone by >40 ng/ml after ovulation promotes endometrial hyperplasia and provides an excellent medium for the bacterial growth (Corrada *et al.*, 2006). This was also indicated by the presence of neutrophils in vaginal cytology. In addition, marked leukocytosis, granulocytosis with normocytic normochromic anaemia also indicated the presence of uterine infection that causes toxic suppression of bone marrow (Batista *et al.*, 2016).

The treatment administered in the present case was effective as indicated by ultrasonographic and

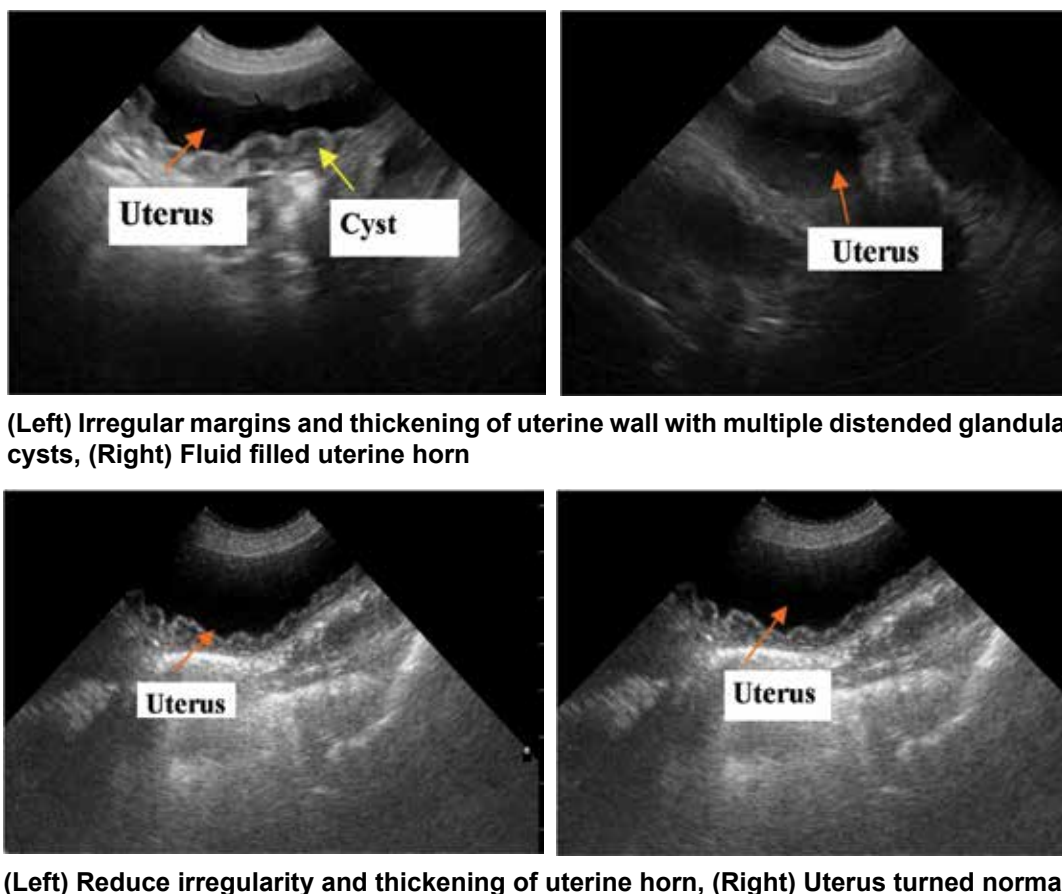


Figure 1: Ultrasonography of a case of cystic endometrial hyperplasia-open pyometra in a bitch during pre- (upper panel) and post-treatment (lower panel) period

Table 1: Haemato-biochemical changes in a case of cystic endometrial hyperplasia-open pyometra in a bitch

Parameters	Pre-treatment (d0)	Post-treatment (d7)	Reference (Ettinger <i>et al.</i> ,1995)
Haemoglobin (Hb), gm/dl	9.5	12.9	12-18
WBCs, x10 ³ cells/ μ l	48.09	17.47	06-17
RBCs, x10 ⁶ cells/ μ l	3.76	5.47	5.6-8.7
Haematocrit, %	27.4	40.6	41-58
Mean Corpuscular Volume, %	73	74.4	58-79
Mean Corpuscular Hb, pg	25.2	23.5	19-28
Mean Corpuscular Hb conc., g/dl	34.6	31.7	30-38
Lymphocyte, %	5.8	19.2	08-38
Monocyte, %	1.7	3.3	01-09
Granulocyte, %	92.5	77.5	60-75
Alanine Aminotransferase, U/L	121	63	25-92
Alkaline Phosphatase, U/L	205	163	10-150
Creatinine, mg/dl	1.9	1.1	0.7-1.4
Blood Urea Nitrogen, mg/dl	34.2	20.2	7-24

haemato-biochemical observations (Table 1, Figure 1). The use of prostaglandins (cloprostenol) induces luteolysis as well as blocks uterine progesterone receptors, thus inhibiting uterine contractions (Nelson *et al.*, 1982). In addition, methyl ergometrine causes contractions of smooth uterine muscles via serotonin receptors to help in evacuation of pus from uterus as well as for reducing the hyperplasia (Noakes *et al.*, 2001).

In brief, synthetic prostaglandin analog along with methyl ergometrine can be used as a drug of choice for treating CEH-open pyometra complex without any side effect.

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