

Cystic Endometrial Hyperplasia-Pyometra Complex in a Bitch: A Case Report

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Abstract

An eight-year-old nulliparous Spitz bitch was presented to clinics with a complaint of persistent vomiting and anorexia since fifteen days. It had a history of purulent discharges from vulva one year back. Based on findings of clinical examination, radiography, ultrasonography and laboratory reports, the condition was diagnosed as cystic endometrial hyperplasia. The clinical symptomology, surgical outcome of the case along with histopathological and immunohistochemical studies of the affected uterus were discussed.

Keywords: Endometrial hyperplasia, nulliparous, hemometra, hydrometra, ovariectomy

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INTRODUCTION

Pyometra is a common reproductive disorder in intact bitches with 4% mortality rate [1] and it can be defined as endometritis/cystic endometrial hyperplasia/pyometra complex [2]. This condition is commonly seen in diestrus bitches, where the dominance of progesterone is high and hormonal imbalances are thought to be the first causative factor for this cystic endometrial hyperplasia—pyometra (CEH/P) complex and bacterial infections which progress the condition. It can be classified as open cervix pyometra and closed cervix pyometra, out of which increased risk is noticed in later type which requires early detection and treatment.

Death in pyometra is mainly due to septicaemia and toxemia. Generally this condition shows subtle changes during early stages which may be unnoticed by the owners resulting in delayed presentation [3]. Uterine affections like hemometra, pyometra and hydrometra which are difficult to differentiate are resulted due to cystic endometrial hyperplasia [4].

In the present paper, diagnosis, management of cystic endometrial hyperplasia along with uterine pathology was discussed.

HISTORY AND CLINICAL EXAMINATION

An eight-year-old nulliparous Spitz bitch was presented to clinics with a complaint of persistent vomiting, anorexia, lethargy for a period of 15 days. It had history of vulval discharges, one year before, for which it was treated by local veterinarian and the symptoms were said to be resolved. The animal was found to appear dull and lethargic. Findings of clinical examination revealed that the discharges were mucoid and without any foul smell from it. Lateral abdominal radiography disclosed distended uterine horns with fluid opacity (Figure 1).



Fig. 1: Lateral abdominal radiograph showing mild distension of uterine horns.

Ultrasonography showed fluid echogenicity in the uterine horns with varied wall thickness. Laboratory reports revealed mild anaemia, neutrophilia, elevated blood urea nitrogen and serum creatinine levels. Based on the findings of clinical examination, radiography, ultrasonography and laboratory reports the condition was tentatively diagnosed as cystic endometrial hyperplasia-pyometra complex.

TREATMENT AND MANAGEMENT

Owing to the clinical condition of the animal, the animal was stabilized with administration of intravenous crystalloids and other supportive drugs along with oral hematonics to improve the condition. Following three days of its presentation where the haemoglobin levels were found to be improved, it was decided to perform ovariohysterectomy.

Animal was prepared for aseptic surgery and premedicated with atropine sulphate at the dose rate of 0.04 mg/kg body weight and induced anaesthesia with Ketamine HCL at the dose rate of 5 mg/kg body weight and Diazepam at the dose rate of 0.5 mg/kg body weight intravenously. Anaesthesia was maintained using Isoflurane. Caudal mid ventral laparotomy followed by ovariohysterectomy was performed. Ovaries were found to be with cysts (Figure 2) and the uterus was found to be distended with nonuniform thickness. Laparotomy wound was closed with three-layer technique as per the standard procedure.

Opening of the uterus revealed thickened endometrium with multiple cysts (Figure 3). Histopathological studies of the uterine tissue revealed polyploid projections into lumen, which were formed due to dilated cystic gland lined by densely packed epithelium and hyperplasia of endometrium. Immunohistochemical studies revealed severely hyperplastic and cystic endometrium showing strong positivity to ER alpha-receptor in the epithelium lining endometrial glands and mild positivity in the stromal cells (Figure 4). Histopathological and immunohistochemical studies of the present case described the involvement of the hormones in the development of present condition.

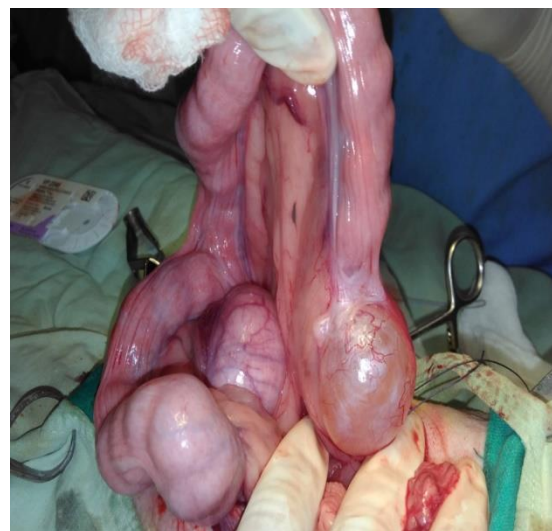


Fig. 2: Intraoperative photograph showing cystic ovaries and distended uterus.

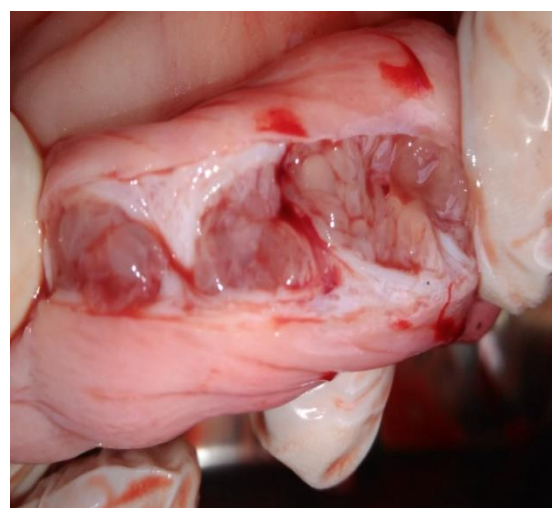


Fig. 3: Photograph showing thickened endometrium with numerous cysts in uterus.



Fig. 4: Severely hyperplastic and cystic endometrium showing strong positivity to ER alpha-receptor in the epithelium lining endometrial glands and mild positivity in the stromal cells.

POSTOPERATIVE CARE

Postoperatively, the dog was given ceftriaxone sodium at the dose rate of 25 mg per kg body weight for 7 days, Meloxicam at the dose rate of 0.2 mg per kg body weight for 3 days, normal saline at the dose rate of 40 ml/kg body weight and supportive therapy with multi vitamin tonics orally for 15 days.

OUTCOME OF THE CASE

Animal recovered and showed normal physiological activity by the end of 12th postoperative day. The present condition was reported in an intact bitch aged eight years. Different studies on the present condition in dogs suggested that it can occur at an age range of four months to sixteen years [5], with a high rate of incidence at more than six years age [6]. The affected bitch in the present condition was nulliparous, which coincides with the statement reported by Chastain *et al.*, (1999) [9], that the incidence of cystic endometrial hyperplasia-pyometra complex is high in nulliparous animals. Few authors like Younis *et al.*, (2014) [10] reported the effect of seasons on the incidence of the present condition. In the present case there was no history of administration of exogenous hormonal injections or contraceptive pills which are reported as main causes for the development of present condition by Younis *et al.*, (2014) [10], whereas Galadima *et al.*, (2013) [11], concluded that the present condition may occur in both the bitches with and without the history of contraceptives. 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. Oestrogen alone cannot produce the CEH/P complex but it aggravates the effect of progesterone on the uterus.

Decreased local immune reactivity and promotion of secretions in endometrial glands and ascending *E. coli* infection from the vagina will increase the inflammation of organ may result in the present condition [7]. Ultrasonography along with radiography plays as a helpful tool in diagnosis of the present condition [8]. In the present case, fluid filled uterus with variable wall thickness of uterus observed during ultrasonography helped in

diagnosing the condition. Similar ultrasonographic findings were reported by Parmigiani *et al.*, (2004) [12] in bitches affected with cystic endometrial hyperplasia-pyometra complex.

Ovariohysterectomy which was performed in the present case was reported as a better choice of treatment for the present condition by many authors like Troxel (2002) [13], Bigliardi *et al* (2004) [14], Agudelo (2005) [15] and Smith (2006). Expression of progesterone hormone receptors in the endometrium in the present case supported the progesterone hormone influence in developing the present condition. Finally by early diagnosis of the condition, proper treatment and postoperative care ensured good recovery in the present case.

CONCLUSION

Cystic endometrial hyperplasia-pyometra complex is a common diestrus disorder of aged bitches, which occur due to hormonal imbalance which can be better diagnosed by radiography and ultrasonography. Earlier detection of this condition is essential to prevent toxemia and septicemia. Ovariohysterectomy and proper postoperative care is the better choice of treatment in this condition which helps in better recovery.

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