

## MEDICAL MANAGEMENT OF A CLOSED TYPE PYOMETRA USING MISOPROSTOL AND CLOPROSTENOL COMBINATION IN A PUG

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### ABSTRACT

A female pug had the history of dullness, depression, inappetance for one week and was crossed 20 day earlier in her first heat. The clinical examination revealed mild congested and dry vaginal mucus membrane without any vaginal discharge. Ultrasound examination revealed multiple anechoic sacculations. The case was diagnosed as closed cervix pyometra and was treated with Misoprostol and PGF<sub>2α</sub> combination. The female pug showed an uneventful recovery subsequent to treatment.

**Key words:** Bitch, Closed cervix pyometra, Misoprostol, Pug, PGF<sub>2α</sub>

### INTRODUCTION

Pyometra is a hormonally mediated reproductive disorder that affects sexually intact mature bitches before they reach the age of 10 year (Baithalu *et al.*, 2010). This disease generally occurs during or immediately following a period of progesterone dominance (Blendinger *et al.*, 1997). The elevated progesterone in diestrus period leads to suppression of uterine contractions, an increase in endometrial gland secretions, closure of cervix, and suppression of immune response, thus creating a favourable environment for bacterial growth. It can be acute or chronic systemic disorder with presence (open cervix pyometra) or absence (closed cervix pyometra) of vaginal discharge; of which, the later being a medical emergency requiring rapid intervention to prevent subsequent sepsis and potential patient death (Baithalu *et al.*, 2010).

### CASE HISTORY AND CLINICAL OBSERVATIONS

A 11-month-old female pug had the history of dullness, depression, inappetance for one week and was crossed 20 days back in her first heat. The clinical

examination revealed body temperature (101.6°F) and pulse rate (110/min) to be within a normal range. The vaginal mucus membrane was mildly congested and dry without any vaginal discharge. On ultrasound examination, multiple anechoic sacculations were noticed and blood picture revealed leucocytosis (neutrophilia). On the basis of history, clinical examination and haematological report, the case was diagnosed as closed cervix pyometra.

### TREATMENT AND DISCUSSION

Ovariohysterectomy is the choice of treatment for pyometra in older and non-breeding bitches. If the condition is not life threatening and the animal is young, then valuable restoration of fertility may be done with medical management using prostaglandin. However, the use of prostaglandins in closed pyometra is contraindicated. In the present case, as the dog was young and the owner was interested in future breeding, medical management with Misoprostol (prostaglandin E<sub>2</sub>) @ 400µg total dose pervaginum was initiated in an attempt to relax the cervix prior to PGF<sub>2α</sub> administration and the treatment was repeated 48h later. A foul smelling purulent vaginal discharge was reported 48h later and thereafter, the dog was treated with Inj. PGF<sub>2α</sub> (Cloprostenol) @ 2.5µg/kg b.

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wt., S/C, once daily for 7 days. In order to minimize the side effects of PGF<sub>2α</sub>, atropine sulphate (0.02 mg/kg b. wt.) was administered S/C prior to PGF<sub>2α</sub> inj. In addition, Tab. Amoxicillin and Clavulanic acid @ 20 mg/kg b. wt. PO was administered twice daily for 14 days. Ultrasound examination on day 7 revealed mild anechoic sacculations but the dog was active and feeding habits had improved. The review on day 14 post treatment revealed no uterine involvement suggesting complete response to PGF<sub>2α</sub> administration.

In bitches, the incidence of pyometra was reported as 9.0-15.2% (Pretzer, 2008) with higher incidence noticed in smaller breeds (Shiju Simon *et al.*, 2011). The exogenous or endogenous concentration of circulating steroid hormone particularly estrogen and progesterone influence the distribution of steroid receptors within the uterus. The regulation of estrogen and progesterone receptors in endometrial glands plays an important role in pathogenesis of pyometra complex in bitch (Baithalu *et al.*, 2010). The administration of prostaglandin E<sub>2</sub> pervaginally leads to remodelling of cervical extracellular matrix (Ledger *et al.*, 1983) and relaxation of cervix while prostaglandin F<sub>2</sub> increases myometrial contractility, regression of corpus luteum and, thereby causing expulsion of uterine contents.

In conclusion, the combination of Misoprostol and PGF<sub>2α</sub> can be used to manage closed pyometra in young and clinically active bitches in order to restore future fertility of bitches.

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