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## Pseudopregnancy in a Pomeranian Bitch: A case study

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### Abstract

A Pomeranian bitch 1.5 year old was presented to Sanjay Gandhi Animal Care Centre Rajouri Garden (SGACC), New Delhi, India, for treatment. Abnormal signs were observed by owner few days before which revealed restlessness, anorexia, aggression, nesting behaviour and licking. Clinical examination revealed enlargement of mammary glands and milk secretion with normal vitals. It was diagnosed pseudopregnancy on the basis of clinical signs and observations as clinical signs are sufficient to diagnose the pseudopregnancy in bitch. The bitch was treated with cabergoline @ 5mg/kg BW orally and pulsatilla 30c @ 3 drops orally BID for 5 days. Owner was also advised to restrict the nesting and self nursing of bitch by applying e-collar. The bitch recovered uneventfully with normal clinical signs.

**Keywords:** Bitch, cabergoline, management, pseudopregnancy, pulsatilla 30c

### Introduction

Pseudopregnancy is a clinical phenomenon in which the non-pregnant female exhibits maternal behaviour and physical signs of pregnancy at the end of diestrus (luteal phase). The terms false pregnancy and pseudopregnancy are often used interchangeably but they may not always refer to the same hormonal situations. The term pseudopregnancy refers specifically to the non-pregnant luteal phase, usually in reference to an animal that is induced to ovulate by coitus, when serum concentrations of progesterone are high. Progesterone causes mammary gland development and weight gain but not the other behavioral and physical changes of false pregnancy. False pregnancy is frequently observed in bitches owing to the fact that the met estrus, luteal or proestrus phase of the cycle is approximately of the same duration as pregnancy i.e. 8 to 9 weeks long and is characterized by clinical signs such as nesting, weight gain, mammary enlargement and lactation. It typically occurs in non-pregnant bitches about 6 to 12 weeks after estrus. When the changes result in extreme behavior or atypical mammary activity, or are presented as clinical problems involving changes similar to those seen in late pregnancy or the early post-partum period [1-3]. The exact incidence of clinical false pregnancy or its distribution among breeds is not known, although it has been estimated to be as high as 50 - 75% [4]. The pituitary hormone prolactin plays a central role in the patho-physiology of overt false pregnancy, but its exact role is not completely understood. The incidence of clinical false pregnancy may be influenced by age, breed, parity and environmental factors. Nutritional practices may also have an influence on the occurrence of false pregnancy [5]. The purpose of the present review is to examine the most relevant aspects of the physiology, clinical signs, diagnosis, treatment and prevention of clinical false pregnancy. All non-pregnant bitches in mid and late met estrus (i.e., diestrus) and between 6 to 20 weeks after estrus, have mammary development much greater than at any other stage of the cycle and peak mammary size is seen at about 14 weeks [6]. The false pregnancy-syndrome usually begins with behavioral signs such as restlessness, decreased activity, nesting, aggression, licking of the abdomen and mothering inanimate objects. Later, pseudopregnant bitches show physical signs such as weight gain, mammary enlargement, even milk secretion and let-down and sometimes abdominal contractions that mimic those of parturition [3, 5, 6]. Mammary hypertrophy is usually more evident in the most caudal pair of glands although the entire mammary chain can be involved. Milk production during false pregnancy apparently results from the development of not only intra-acinar but also intracanalicular mammary secretion in predisposed bitches. Lactation is often encouraged by self-nursing or by adoption of unrelated neonates. Vomiting, anorexia, diarrhea, polyuria, polydipsia, and polyphagia have also been reported by [4].

Prolactin concentrations normally increase slightly above basal values between days 60 and 90 of the non-pregnant estrous cycle<sup>7</sup> with increases often seen as early as day 40. There is also an inverse relationship between progesterone and prolactin concentrations in the normal non-pregnant cycle between days 40 and 90<sup>[8]</sup>. In bitches with false pregnancy higher serum concentrations of prolactin had been reported<sup>[9]</sup>, whereas prolactin during false pregnancy is variable or not elevated<sup>[5, 10, 11, 12]</sup>. Prolactin appears to be the most important endocrine factor in the development of the symptoms of false pregnancy; other hormones including estrogen might also play a role<sup>[13]</sup>. A positive correlation between prolactin and estrogens has been found in some bitches<sup>[14]</sup>. The role of growth hormone, which is deeply implicated in the process of mammogenesis in many mammalian species<sup>[13]</sup> is not clear in canine false pregnancy.

Homeopathic remedies are useful in the treatment of pseudopregnancy. Pulsitella 30c is almost useful homeopathic remedy for false pregnancy @ 3 times daily for 5-7 days orally and if necessary repeat after a week. Alternate for restlessness, nervous signs is Asafoetida. Calcarea carbonica and Bryonia can also be used to decrease the milk production (Leseprobe von Francis Hunter – Everyday Homoeopathy For Animals, <http://www.narayana-verlag.com/b714>).

False pregnancy diagnosis is based on the overt and extent of the more commonly reported clinical signs. Because unscheduled mating may be overlooked by owners, pregnancy should always be considered. In case of doubt, ultrasound or radiography should be used. Other conditions of the luteal phase, such as pyometra or recent pregnancy and abortion, should be ruled out by abdominal ultrasonography or radiography, a complete blood cell count including vulvar and vaginal examination is helpful for diagnosis. It is also important to keep in mind that false pregnancy can coexist with other reproductive or non-reproductive clinical problems, sometimes making diagnosis more difficult.

### History and Observations

A 1.5 year old Pomeranian bitch was presented to Sanjay Gandhi Animal Care Centre Rajouri Garden (SGACC), New Delhi, India, for treatment because of abnormal signs observed by owner. Abnormal signs were observed by owner few days before which revealed restlessness, anorexia, aggression, nesting behaviour and licking of mammary gland. After clinical evaluation it was seen that bitch has enlarged mammary and milk secretion while as physiological vitals were found normal. Similarly observed by<sup>[4, 5]</sup> that pseudopregnant bitches show physical signs such as weight gain, mammary enlargement, even milk secretion and let-down and sometimes abdominal contractions that mimic those of parturition. Based on the history and clinical observations it was diagnosed pseudopregnancy as the diagnosis of pseudopregnancy is based on the overt and extent of the more commonly reported clinical signs in bitch.

The bitch was treated with cabergoline @ 5mg/kg BW and pulsatilla 30c orally 5 days along with managemental practice. After 5 days of treatment, bitch showed complete recovery with normal clinical signs.

### Treatment and Discussion

The bitch was treated with cabergoline @ 5mg/kg BW orally and pulsatilla 30c @ 3 drops orally BID along with managemental practice of restricting the bitch from nesting and self-nursing. After 5 days of therapy the bitch recovered completely and fruitfully with normal clinical signs. The

peaceful recovery may be due to management and homeopathic part of therapy. Avoiding of nesting and self-nursing behavior of bitch and pulsatilla 30c may adjuvants the effect of cabergoline to decrease the prolactin concentration peacefully and to eliminate the behavioral, physiological changes. By diverting the bitch from nesting and self-nursing may affect psychologically which helps bitch to combat from false pregnancy.

Therapy for pseudopregnancy is specific, is to inhibit the secretion of prolactin hormone. Prolactin appears to be the most important endocrine factor in the development of the symptoms of false pregnancy, other hormones including estrogen might also play a role<sup>[13]</sup>. Inhibition of prolactin secretion by ergot alkaloid drugs has produced a revolution in the treatment of canine false pregnancy. This inhibition can be modulated indirectly by serotonin, which suppresses dopamine release and increases prolactin<sup>[15]</sup>. The most common ergot compounds used clinically to inhibit prolactin secretion are the dopamine agonists bromocriptine and cabergoline. Another ergot alkaloid, is a serotonin antagonist, and thus has a dopaminergic effect and thus reduces prolactin secretion when administered at high doses<sup>[3, 16, 17]</sup>. It can be effectively administered once a day. Cabergoline crosses the blood brain barrier only slightly and consequently has much less central emetic effects than some other dopamine agonists<sup>[2, 3, 11]</sup>. Cabergoline is marketed with an indication for use in pseudopregnant bitches at a dose of 5 mg/ kg/day for 5 to 10 days, orally.

Homeopathic remedies are useful in the treatment of pseudopregnancy. Pulsitella 30c is almost useful homeopathic remedy for false pregnancy @ 3 times daily for 5-7 days orally and if necessary repeat after a week. Alternate for restlessness, nervous signs is Asafoetida. Calcarea carbonica and Bryonia can also be used to decrease the milk production<sup>[18]</sup>.

### Conclusion

Cabergoline is specific therapy for pseudopregnancy and it doesn't need any supportive therapy. Managemental practice of diverting and restricting bitch from nesting and self-nursing behavior and pulsitella 30c may helps in peaceful recovery of pseudopregnant bitch. The permanent solution for prevention of pseudopregnancy is spaying which inhibits the ovulation and the progesterone and prolactin inverse proportionality i.e., decrease in progesterone level after ovulation leads to increase in prolactin concentration which causes pseudopregnancy. So spaying is the permanent solution for prevention of pseudopregnancy.

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