



A Case of Pseudopregnancy in a Bitch

C. S. Ukwueze ^{a*} and K. A. Raheem ^b

^a *Department of Veterinary Medicine, Michael Okpara University of Agriculture, Umudike, Nigeria.*

^b *Department of Theriogenology, Michael Okpara University of Agriculture, Umudike, Nigeria.*

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

A case of pseudopregnancy was presented to Veterinary Teaching Hospital, Michael Okpara University of Agriculture Umudike, Nigeria. Eighteen (18) months old bitch weighing 15kg was presented clinical signs suspected to be pseudopregnancy, which was observed four weeks after the bitch came on heat (estrus). The clinical signs observed were restlessness, anorexia, aggression, nesting behaviour and licking of mammary gland. On clinical examination it was observed that bitch had enlarged mammary glands and milk secretion. The physiological parameters were found to be within the normal range. Abdominal palpation, ultrasonography and vagina cytology were carried out to confirm pregnancy. Due to absence of fetuses on abdominal palpation and ultrasonography and presence of scanty epithelial cells in vaginal cytology, it was confirmed and concluded to be a case of pseudopregnancy. Causes, treatment and other associated factors with pseudopregnancy were further discussed.

Keywords: *Pseudopregnancy; ultrasonography; vagina cytology; estrus; bitch.*

1. INTRODUCTION

Pseudopregnancy is one of the most frequent clinical features observed in non-pregnant domestic bitch [1,2,3]. The female dog has several unique reproductive features in comparison to other domestic and laboratory species [4]. The term pseudopregnancy was previously used to describe an abnormally long luteal phase of the estrus cycle observed in the rabbit. It is characterized by clinical signs similar to those seen in late pregnancy or the early postpartum period [5]. Pseudopregnancy mimics signs of parturition and lactation in the pregnant bitch. Clinical signs usually begin 6 to 12 weeks after estrus [6,7]. Different studies have reported a wide range of physical and behavioural changes in a pseudopregnant bitch such as restlessness, anorexia, decreased activity, aggression, licking of the abdomen [8,9], nesting, mothering inanimate objects, adopting other bitches puppies [10,11], weight gain, mammary enlargement, milk secretion and sometimes abdominal contractions [6,4]. The major differential diagnosis is pregnancy, which can be generally ruled out after signs of pseudopregnancy are exhibited by abdominal palpation, ultrasonography or radiography [4].

The exact cause of pseudo-pregnancy is poorly understood, although it is normally suggested that certain hormonal changes might play an essential role in the development and maintenance of pseudopregnancy [12]. Exposure and decline of plasma progesterone, high plasma prolactin concentrations, increased tissue sensitivity to prolactin, or the existence of molecular variants of prolactin with varying bioactivities has been linked with pseudopregnancy [13,14,15,16]. The incidence of pseudopregnancy in most breeds is estimated to be as high as 50-75% in certain breeds [17,18]. The incidence of pseudopregnancy has been reported in various part of the world [16, 19], with associated economic losses to dog owners and breeders. This case report therefore, presents a confirmed case of pseudo pregnancy in a bitch presented to Veterinary Teaching Hospital, Michael Okpara University of Agriculture, Umudike, Nigeria.

2. CASE HISTORY

Eighteen (18) months old bitch weighing 15kg was presented to Veterinary Teaching Hospital, Michael Okpara University of Agriculture, Umudike with a complaint of late pregnancy and

delayed whelping. The owner observed abnormal signs; weeks after the dog came on heat (estrus) which included restlessness, anorexia, aggression, nesting behaviour and licking of mammary gland. On clinical examination, it was observed that bitch had enlarged mammary and milk secretion. After expected gestation period, the bitch did not whelp and was presented to the clinic for examination and treatment. The physiological parameters were found to be within the normal range. Abdominal palpation, vaginal cytology and ultrasonography were carried out to confirm pregnancy status.

3. RESULTS AND DISCUSSION

Pseudopregnancy was suspected based on the history and clinical signs exhibited by the bitch [4]. The observed physical signs were weight gain, mammary enlargement, milk secretion and signs that mimics imminent parturition, which was previously reported [20,21]. In this study ultrasonography showed the absence of fetuses (Fig. 1). False pregnancy or pseudopregnancy is generally ruled out by abdominal palpation, ultrasonography and radiography [5,22]. Ultrasound is a common veterinary tool in the diagnosis of pregnancy among domestic and zoo animals.

Vaginal cytology also revealed that the animal has gone into anestrus phase of the estrous cycle as shown by the characteristic appearance of predominantly basal cells in the vaginal epithelium (Fig. 2). Anestrus is the final stage of estrous cycle which is mainly associated with squamous epithelial cells, such as intermediate or parabasal cells. There may be presence of some neutrophils with scanty or low cells [23]. Returning to anestrus phase of the estrous cycle without whelping is an evidence of pseudopregnancy which was observed in this study.

Pseudopregnancy is typically self-limiting and treatment is not usually considered in mild cases with maternal behaviour highly mammary tumours [22,24]. Sex steroid therapy especially androgen that include testosterone and synthetic discouraged in the bitch. However, placing Elizabethan collars to prevent licking of the mammary glands is recommended as they are potential stimuli for lactation and hence, need to be avoided. Water removal overnight for 5 to 7 nights promotes fluid conservation and also helps to terminate lactation [9].

In some cases of repeated episodes of pseudopregnancy with significant behavioural changes, mild tranquilization with non-phenothiazine drugs can be useful to prevent the development of androgen can suppress lactation. Side effects can include clitoris hypertrophy, other form of virilisation, and epiphora [6]. Prolactin-suppression therapy involving the use

of bromocriptine and carbergolin administered in high doses [25,26]. In bitches with repeated cases and not intended for breeding, ovariectomy or spaying, preferably done during anestrus phase is the only permanent solution [27,19]. Cases of false or pseudopregnancy are present in all breeds of dogs and has huge socio economic impacts on dog breeders and owners.



Fig. 1. Ultrasonography of pseudopregnant uterus of the bitch



Fig. 2. Scanty distribution of vaginal epithelial cells (× 40 magnifications)

4. CONCLUSION

It is concluded that abdominal palpation, ultrasonography and vagina cytology were carried out to confirm pregnancy. Due to absence of fetuses detected via abdominal palpation and ultrasonography and presence of scanty epithelial cells in vaginal cytology, it was confirmed and concluded to be a case of pseudopregnancy.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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