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A CASE OF CONSERVATIVELY MANAGED DYSTOCIA IN 2 YEAR OLD ALTSATIAN BITCH

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ABSTRACT

This was a case of dystocia in a 2 year old Alsatian bitch presented to the Michael Okpara University of Agriculture Veterinary Teaching Hospital, Umudike which was conservatively managed. The bitch was presented with brown foul smelling vaginal discharge with dullness and evidence of weak contractions. The owner revealed that he has had similar experiences with two other bitches co-inhabited with this one, which eventually led to stillbirth. The condition was managed using warm water and oxytocin injection to boost uterine contraction. The bitch eventually whelped 4 puppies the next day; 2 dead and 2 live puppies. Prior to this, conservative management was carried out by infusing about 180 ml of warm water into the uterus, intramuscular injection of 1.0 iμ of Oxytocin (Soft land China) every 30 minutes over a period of 3 hours, intramuscular injection of Gentamycin (Pantex, Holland) at 14 mg/kg and multivitamin (Soft land, China) at 1 ml/kg for 3 days, This suggested that dystocia when thoroughly evaluated, and appropriate obstetric management regimen established with strict enforcement of bio-security measures, could be successfully managed with good outcome.

Keywords: Dystocia, conservative management, Alsatian bitch

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INTRODUCTION

The normal gestational period in the dog is 57 to 72 days [1]. Problems in gestational development in dogs can be caused by infectious and non-infectious factors. Among the non-infectious causes, trauma or certain medications during pregnancy, genetic characteristics of the animal, deficit nutrition, thyroid dysfunction, maternal problems, foetal problems and hormonal disorders are incriminated [2].

Dystocia is a common emergency in canine patients [2]. Dystocia is defined as the inability of the dam to expel the fetus without assistance through the birth canal [3]. Knowledge of physiology, thorough history and clinical examination of the patient and appropriate medical or surgical treatment based on findings are mandatory for a good outcome in both dam and offspring [4].

In bitches, normal gestation length is 63 ± 7 days from the first breeding, 65 ± 1 day from luteinising hormone (LH) peak or 57 + ±3 days from first day of dioestrus [1]. Predictors of labour include a

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measured drop in circulating progesterone level: temperature drop of 1–1.7°C, 6–18 hours prior; mammary development with onset of lactation; vulvar enlargement; mucous vaginal discharge; decrease in appetite and nervousness. The three stages of labour can be seen for each fetus born: cervical dilation (6–12 hours), delivery of the fetus (2–6 hours) and placental passage (5–15 minutes) [1]. Dystocia may be caused by maternal or fetal factors and/or ineffective uterine contractions [5]. Maternal factors may be metabolic (hypoglycaemia, weakness, etc.) or anatomical (narrow birth canal, old pelvic fractures), uterine infection, or torsion. Primary uterine inertia (complete or partial) and uterine fatigue leading to secondary uterine inertia are causes of ineffective uterine contractions. Oversized puppies are the most common fetal causes but malformations, malpresentations and dead fetuses may also cause dystocia [6].
The beginning of first stage of labour has been defined as the start of uterine contractions after removal of the progesterone block which will support the opening of the cervix [7]. The Ferguson's reflex involves a positive feedback mechanism. The uterine contractions and action of hormones such as estrogens and relaxin lead to a progressive dilatation of the cervix [8]. This dilatation, together with uterine contractions, lead to expulsion of the fetus through fully dilated cervix [7].

The clinician must rapidly identify the stage of labour and determine whether veterinary attention is warranted. Proper history taking, physical examination, vaginal examination, abdominal radiography, abdominal ultrasonography and monitoring the fetal heart rates, and intrauterine pressures can assist the clinician in diagnosing and managing canine dystocia patients [2, 9].

Successful treatment of dystocia depends upon correct diagnosis of the causes of dystocia and when it started [9]. If the bitch is in a good condition and has not been in prolonged labour and there is no evidence of obstruction or fetal distress, and there are 4 or less pups, medical intervention may be attempted. The purpose of medical management is to first correct the underlying abnormalities [2]
Medical management of dystocia has the advantage of aiding completion of the parturition process without surgery or anesthesia. However, since not all cases of dystocia can be managed medically, an educated and careful decision making is required prior to instituting medical management in cases of dystocia [2]. Administration of Oxytocin, intravenous fluids, and calcium gluconate are the mainstays of medical management [8]. Incremental small doses of oxytocin every 30-40 minutes to a maximum dose of 5 iμ, reduces the deleterious side effects associated with oxytocin which includes uterine rupture, placental separation, fetal death, maternal vasodilation and hypotension. It also prevents or disrupts excessive blood flow to the fetus and placenta. The action of oxytocin during parturition is to increase sodium permeability in the uterine myofibrils, stimulating uterine contraction in the presence of calcium. Oxytocin is therefore used for the medical management of primary uterine inertia [2]

CASE HISTORY, DIAGNOSIS, TREATMENT AND OUTCOME

A two-year-old primiparous cross-bred Alsatian bitch weighing 34kg was presented to the Michael Okpara University of Agriculture Veterinary Teaching Hospital, Umudike. History revealed that the bitch was mated by an Alsatian stud 57 days prior to presentation and had suddenly gone off feed, appeared depressed, and was straining with foul smelling slimy dark-brownish vaginal discharge for over 24hours prior to the day of presentation. The owner further explained that previously, two other bitches in the kennel had experienced similar symptoms which lead to abortions and stillbirths. Further investigation revealed that the dog's vaccination history was up to date except a booster dose of DHLPP.

On examination, all clinical parameters were within normal range. Abdominal palpation and auscultation was done to ascertain foetal presence and viability. The mammary gland when expressed was dry and the cervix was not totally dilated.
A tentative diagnosis of dystocia was made while threatened abortion was considered as the differential diagnosis.

Confirmatory diagnosis
Blood sample and vaginal swabs were sent to the laboratory for blood parasite analysis, and culture and antimicrobial sensitivity test.
Microbial culture revealed a Significant growth of *Proteus* species and which was highly sensitive to gentamicin among other antibiotics.

Treatment
The animal was treated using the following regimen; 180mls of warm water was infused into the uterus via catheter followed by intramuscular injection of oxytocin (Soft land, China)at 1.0 iu every 30 minutes over a period of 3 hours. Gentamycin (Pantex, Holland)at 14mg/kg and multivitamins (Soft land, China) at 1ml/kg were also administered for three days.

Outcome of treatment
The bitch whelped four puppies the next day. Unfortunately two puppies were born as stillbirths. The surviving puppies were healthy and the bitch's vital parameters remained normal and she made an uneventful recovery.

Plate 1: The bitch during vaginal swab collection.

Plate 2: The bitch during the insertion of a catheter for intra-uterine infusion of warm water.

DISCUSSION
This was a case of dystocia probably as a result of abnormality in uterine function, as the presence of the greenish vaginal discharge implied that the placenta was separating [10]. In this case, the slimy dark-brown vaginal discharge was fetid and had lasted for over 24 hours without any puppy being delivered. Usually, this colour and odour of the vaginal discharge called for emergency intervention coupled with the history of previous occurrence in the co-habited bitches that had abortions and stillbirths. This observation agreed with Aithur et al. [10] who reported that a history of abnormal discharge from the vulva during pregnancy which contains blood or pus, or is brown or black tinged with foul odour implied serious pregnancy complications. It may indicate that the dog is battling with uterine infection or that she has dead fetuses within her [10]. This justifies immediate medical intervention to possibly save the dam and the fetuses.

The 180ml of warm water infused into the uterus was to enhance uterine contractions which as at the time of presentation was weak. Oxytocin administered was aimed at activating the oxytocin receptor which triggers a number of signaling events to stimulate uterine contraction and aid safe delivery.

The vaginal swab culture yielded high growth of Proteus spp which was very sensitive to gentamycin. The Proteus spp, though known to be opportunistic pathogen of humans, in animals are considered to be either pathogenic or physiologic microflora, hence the need to administer gentamycin for 5 days. Proteus has been incriminated in Urinary tract and gastrointestinal disease conditions in dogs [11], although it has been documented to also cause abortion as a result of either septicemia or ascending infection through the vagina and cervix or due to persistent endometritis in cattle [12]. Proteus species may be incriminated in this case even though it is part of the normal urinary tract flora [11] possibly due to over growth. 1

Following the prompt medical intervention, the bitch was able to whelp the next day though 2 out of 4 puppies were stillbirth. Finally, multivitamins were administered to manage stress, and to improve appetite and the immune system.

Surgery was not resorted to because the bitch was in a good body condition with a positive response to the medical management. The dog owner was advised to always monitor gravid bitches closely especially at full term and make prompt report of cases of prolonged labour to veterinarians in order to prevent fetal and or maternal death. The veterinarians should thoroughly evaluate dystocia cases and establish an appropriate obstetrical management regimen for good outcome in both dam and offspring, and also reduce cost and the risks associated with anaesthesia.

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