



Assisted Parturition in a Balami Ewe

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SUMMARY

In this study, we report a case of dystocia in a three-year old Balami ewe from a herd of small ruminant made up of 5 females and 2 males. The animals were acquired about 3 months before the incidence occurred and were managed under semi-intensive system. The ewe had no breeding records; neither was there an immediate evaluation of the pregnancy status of the ewe post purchase. One early morning, the ewe was found on sternal recumbency with a delivered lamb on its side. The lamb was still covered with amniotic membranes and grasping for breath. It was quickly lifted up and dried-up with clean towel. Further clinical examination on the ewe revealed presence of another foetus inside the uterus. About 20 mins after, uterine/abdominal contraction commenced but was not progressive. Amniotic sac was broken. This was not successively followed by higher intensity of contraction sufficient enough to cause expulsion of the foetus for about 30 mins. Insertion of gloved hand into the cervix showed a well dilated cervix and presence of foetus in the right parturition disposition as indicated by anterior presentation, dorso-sacrum position and extension of foetal forelimb and neck. An immediate intervention was required to save the foetus and the mother. The diagnosis was dystocia due to uterine inertia because of inadequate contraction of the uterine and abdominal muscle possibly resulting from weakness (hypoglycaemia) or hypocalcaemia after the delivery of the first lamb. The cervix was well dilated enabling the passage of the hand. Assisted parturition was instituted by grasping the forelimbs together with the head of the foetus. With a gentle traction, the foetus was delivered alive. The lamb was dried of foetal membranes and fluid. The two lambs were viable and able to suckle the dam. In conclusion, this report underscores the need for breeding record keeping and evaluating the pregnancy status immediately after animal purchase for proper monitoring of pregnant animal and instituting an adequate necessary treatment to prevent dystocia and its associated problem in farm animals.

Key words: Parturition, dystocia, sheep, breeding record

INTRODUCTION

Parturition involves three main stages leading to cervical dilation, expulsion of foetus and foetal membranes (Noakes *et al.*, 2009). The three stages are synergized with

one stage successively progressing in to the other. Time lapse to progress from one stage to another and associated parturient events are two major factors that may transform a

parturition process from eutochia that goes on smoothly into dystocia in which the process has prolonged and deviated from the norms.

Methods for treating dystocia comprise manipulation and traction, therapeutic administration of ecbotic agents, episiotomy, caesarean section and finally if the foetus is confirmed dead and/or if the life of the dam is threatened when the foetus cannot be delivered, foetotomy is recommended (Youngquist, 1997). No two cases of dystocia are exactly the same and even if they are, may not necessarily be corrected via the same procedure. The procedure of choice is dependable on a number of factors that include i) primary cause of dystocia, ii) viability of the foetus and the dam, iii) availability of required instrument and facilities and lastly iv) the skills and the competence of the veterinary obstetrician coupled with provision of necessary assistance to execute the chosen procedure of intervention (Adeyeye, 2017).

In this study, a case of dystocia in a 3-year old Balami ewe that was resolved by manual

traction is reported. The rationale behind using this method is evaluated while various causes and other management strategies available for treatment of dystocia are further highlighted.

CASE DETAILS

History and primary complaint

A herd of small ruminant made up of 7 (5 females and 2 males) Balami sheep and 5 Red Sokoto goats was constituted about three months prior to the incidence. The animals were managed under semi-intensive system with restricted grazing on elephant grass (*Pennisetum purpurem*) and Guinea grass (*Panicum maximum*) as well as unlimited access to clean water. The Sheep were between 2 1/2 to 3 years of age according to dentition (Landais and Bassewitz, 1982). There were no breeding records; neither was there an immediate breeding soundness examination (BSE) to ascertain the pregnancy status of the ewe post purchase. One early morning, one of the ewes was found on sternal recumbency with a delivered lamb (Figure 1).

Clinical Examination

Clinical examination revealed the delivered lamb was still covered with amniotic membranes and grasping for breath. It was quickly lifted and dried-up. Abdominal palpation on the ewe revealed the presence of another foetus. About 20 mins after, uterine/abdominal contraction commenced but was not progressive. Amniotic sac appeared to have broken which was not successively followed with a relatively high intensity of contraction sufficient enough to cause expulsion of the foetus for about 30 mins. Insertion of gloved hand into the cervix showed a well dilated cervix and presence of foetus in the right parturition disposition.



Figure 1: Recumbent Ewe after delivery of the first lamb (White arrow)

Treatment

An immediate intervention was required to save the foetus and by extension, the dam. The diagnosis was dystocia due to uterine inertia because of inadequate contraction of the uterine and abdominal muscle possibly resulting from weakness (hypoglycaemia) or hypocalcaemia after the delivery of the first lamb. A gloved right hand was gently inserted into the uterus via the vagina. Assisted parturition was instituted by grasping the forelimbs together with the head of the foetus. With a gentle traction, the foetus was successfully delivered. It was still alive and gasping for breath. The lamb was dried using a clean towel of foetal membranes and fluid (Figure 2). It became stable and was kept with the first lamb beside the dam for breastfeeding (Figure 3). The ewe remained recumbent and unable to breastfeed the lambs immediately. Hence, artificial colostrum (made of milk, fresh poultry egg, cod liver oil, sugar and antibiotics) was constituted and was given to the lambs for first day before they were able to be nursed by the dam.

DISCUSSION

Foetus is the initiator of birth processes through stimulation of its hypothalamic-adrenal axis by stress due to inadequacy of micronutrient and gases by the foetus as it approaches term as well limited space as the

foetus has outgrown the uterine lumen (McMillen *et al.*, 2004). Corticotropin releasing hormone from the foetal hypothalamus that stimulates the release of adrenocorticotrophic hormone (ACTH) from the foetal pituitary. ACTH induces release of adrenal cortisol which brings about changes in hormonal regulation of pregnancy to parturition (Thorburn *et al.*, 1991, Poore *et al.*, 1998). Cortisol induces synthesis of aromatase that causes conversion of progesterone to oestrogen and this is associated with the release of $\text{PGF}_{2\alpha}$ and oxytocin altogether initiating uterine contraction to deliver the foetus and then the placenta after (Veitch *et al.*, 2002).

Dystocia is one of the most common obstetric conditions in ruminant and of particular concern with multiple conceptions in sheep (Noakes *et al.*, 2009). Dystocia prevalence of less than 5% was reported in dairy cattle (Mee, 2008) while a higher percentage of 10.8% out of 55,577 calving records on 30,879 Holstein cows in 30 dairy herds was reported in Iran (Atashi *et al.*, 2012). In camel, Ali *et al.* (2016) reported a prevalence of 8.6%. In goat under small holder husbandry system in Bauchi, Nigeria, prevalence of 20.70% was reported by Zahraddeen *et al.* (2010). There is paucity of literatures on the prevalence of dystocia in sheep. Jackson, (2004) quoted an estimated prevalence of 3% in sheep across a number of

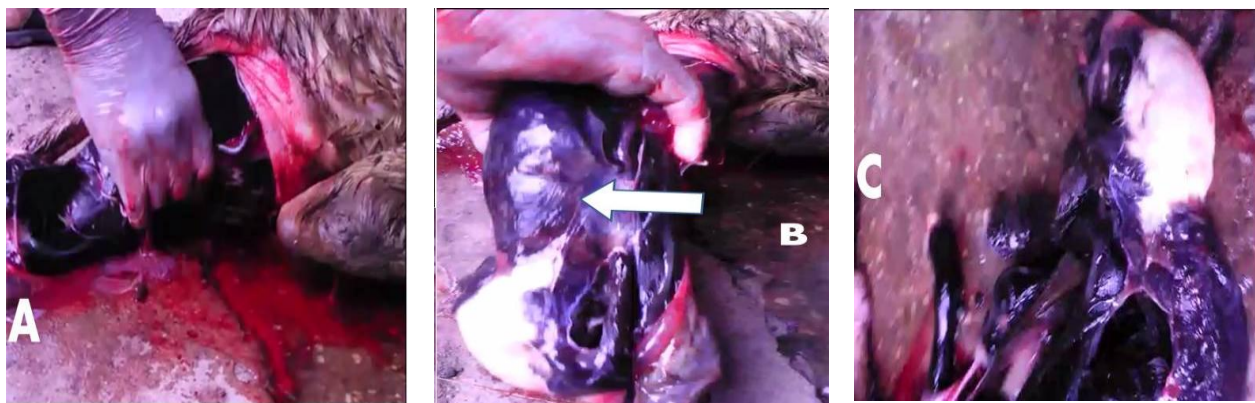


Figure 2: Images showing insertion of gloved hand into the vulva (A) and traction application to deliver the second lamb (white arrow) through the head (B) and cleaning off the foetal membrane after delivery (C)

surveys.

Dystocia may be maternally derived or originates from the foetus. Foetal causes of dystocia include foetal death, developmental defect (such as anarsaca), foetal abnormal disposition and foetal oversize as well as twinning (Jackson, 2004). Foetal oversize may be classified into two, absolute foetal oversize in which the dam pelvic size is sufficient but the foetus is oversize and relative foetal oversize or foeto-pelvic disproportion where the foetus is of moderate size but the maternal pelvis is smaller. The latter may result from breeding with a higher sire (Speijers *et al.*, 2010). The parity of the dam also has a significant effect on the cause of dystocia. Foeto-pelvic disproportion predominates in the primiparae whereas foetal malposition is

commonly encountered in pluriparae (Mee, 2008). In the current case report, it was not clear if the ewe was a primiparae or pluriparae since such record was not available. Maternal factors causing dystocia is either due to obstruction of the birth canal (arising from uterine torsion or small pelvis) or compromise of expulsive force originated from uterine and abdominal muscles contraction (Noakes *et al.*, 2009).

When twinning in ruminant may increase productivity and makes livestock more profitable as desirable in beef cattle production (Gregory *et al.*, 1996), twinning is undesirable in dairy because of its adverse effect on milk yield available for sale (Hossein-Zadeh, 2010). In sheep, occurrence of multiple pregnancies is also contra-indicated because it predisposes to pregnancy toxemia and associated post-parturient conditions (Schlumbohm and Harmeyer, 2008). Perhaps, the twinning observed in the present case may be partly responsible for the dystocia associated with lambing of the second foetus. Compromise of the expulsive force possibly due to hypoglycaemia or hypocalcemia after the delivery of the first foetus was apparently the primary cause of dystocia in this case



Figure 3: Images of the twin lambs (white arrows) with the Ewe

while hypocalcemia is acknowledged as a frequent precursor of uterine inertia (Jackson, 2004).

In addition, gestation length in sheep is estimated to be 150 days with twin/multiple conceptions bringing about a reduction in gestation length from 283 to 275 days in cattle (Echternkamp and Gregory, 1999). Since there was no history of diagnosed pregnancy before the incidence, these physiological data such as gestational age and parity were not beneficial to the handling of the case.

Manipulation and application of traction require a well dilated cervix that allows passage of the hand through cervix as was observed in this case, contributed to the success of the delivery. Such method had been used successfully in the treatment of dystocia cases in ruminants that include sheep and goat as was reported in earlier studies (Osugwuh *et al.*, 1980, Nix *et al.*, 1998). Administration of uterine ecbolic like oxytocin might have proved successful if given in this case (Barrett *et al.*, 2009), however, manipulation was preferred because of the immediate need to save the foetus since amniotic sac was broken and

considering the time to source for the drug and for the drug to take effect.

In conclusion, this report underscores the need for breeding record keeping and verifying the pregnancy status after animal purchase for proper diagnosis and monitoring of pregnant animal to be able to institute an adequate necessary intervention at the time of parturition if the need arises.

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