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Correction of Vaginal Prolapse in a Pregnant EWE: A Case Report

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Abstract**—** *This case report describes a successful correction of vaginalprolapse in a pregnant ewe in her last trimester. The prolapse was noticed some days following abrupt change in feed. On physical examination, the sheep was depressed and recumbent with intermittent straining. Epidural anaesthesia was achieved via administration of lidocaine into the first intercoccygeal space. The swollen and edematous prolapse was cleaned and decontaminated using mild potassium permanganate, after which the prolapse was repositioned and purse string suture was applied on the vulva for retention purpose. The animal was placed on antibiotics for 5 consecutive days to prevent secondary bacterial infection and the suture material was removed on the 8th day with no signs of recurrence. The sheep delivered precisely a week after the suture was removed with no complications. In conclusion, this report has shown detail of a successful correction of vaginal prolapse in a pregnant ewe.*

Keywords**— sheep, vaginal prolapse, pregnant, recurrence, epidural.**

I. INTRODUCTION

Genitalia prolapse is one of the major conditions of the reproductive tract with tendency to cause heavy economic loss to livestock farmers due to its negative influence on the productive and reproductive performances of female animals (El-wishy, 2007).Vaginal prolapse is one of the frequently encountered problems in late trimester of pregnancy in sheep and cattle. However, it has also been reported in non-gravid heifers (Yotov *et al.,* 2013). Numerous predisposing factors have been linked to the occurrence of vaginal prolapse. Some of the documented aetio-pathogenesis of vaginal prolapsed is the upsurge of hormones such as estrogen and relaxin during the last trimester of pregnancy. These hormones cause the relaxation of pelvic ligaments and other surrounding structures. This hormonal effect in combination with the increased abdominal pressure elicited by the gravid uterus is one of the predisposing factors of vaginal prolapsed (Wolve, 2009). Multiple fetuses, large fetus, intra-abdominal fat accumulation and ruminal distension are other causes of increased abdominal pressure which may contribute to the development of vaginal prolapse (Drost, 2007). Nutritional factors such as hypocalcemia, grazing on pastures with an abundance of clover and feed containing phytoestrogenic substances have also been documented as predisposing factors of this condition (Miesner and Anderson, 2008).Vagina prolapse often comes with devastating sequelae especially if not treated promptly. The swollen, edematous and congested vagina may result in vaginal rupture with herniation of the intestines, bladder or uterus. Additionally, the prolapsed tissue can trap the urinary bladder leading to urethral obstruction and subsequently urinary bladder rupture. Vaginal prolapse which contains the bladder within the prolapsed tissue will potentially alter the replacement (Veeraiah and Srinivas, 2010). Vascular disturbances, bacterial contamination and septicaemia leading to unfavourable prognosis are other potential complications (Hasan *et al.,* 2017).Abnormal clinical parameters such as an increased pulse, anorexia, an increased respiratory rate, signs of toxemia and congested mucous membranes may indicate fetal death and impending abortion, both known complications of vaginal prolapse in ewes (Scott and Gessert, 1998). Management of vaginal prolapse is often targeted towards eliminating systemic disturbances, vaginal replacement and prevention of recurrence (Bhattacharyya *et al.,* 2012).The condition has a significant economic implication, causing serious financial loss to the farmer as it assumes epizootic proportions, with its highest incidence during the later stages of pregnancy (Mclean, 1956). Therefore, for sheep production to be more economically sustainable, the incidence of vaginal prolapse must be greatly controlled and the negative influence of the condition be prevented through prompt medical attention to correct the condition.

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In this article, we report a successful repositioning of vaginal prolapse in a ewe in late pregnancy.

II. CASE REPORT

History and clinical observation

A 2½-year-old Balami sheep in the third trimester of her second pregnancy was presented with prolapsed vagina which was earlier observed as a tiny eversion about 3cm two days prior to our visitation. The farm attendant observed that the everted tissue kept increasing in size and was almost 15cm when presented for treatment. History further revealed that, prior to the appearance of the prolapse, there was an abrupt change in feeding regimen as molasses was introduced to the herd in place of cassava peel. On physical examination, the ewe was restless and recumbent with intermittent straining (Plate 1&2).The prolapsed mass was swollen, edematous and soiled with dirt. The basic clinical parameters recorded were unremarkable (Table 1).

Plate 1: Recumbent ewe with vagina prolapse showing discomfort

Plate 2: The ewe straining when assisted to stand

Table1: Clinical parameters recorded for the ewe

Parameter	Patient's value
Rectal Temperature	38.7^0C
Heart rate	80bpm
Pulse rate	76bpm
Respiratory rate	44bpm
Capillary refill time	<2secs
Mucous membrane	Pink

Management and Outcome

In order to prevent further straining and to desensitize the perineal region for easy manipulation of the tail and the perineum, the animal was placed on epidural anaesthesia. This was achieved by administration of 2mls of 2% lidocaine into the first intercoccygeal space (Plate 3).The anaesthetic effect was confirmed after 7 minutes by needle prickling of perineal region, where failure to responds to pain and tail flaccidity indicates a loss of sensation. With gloved hands, the prolapsed tissue was carefully cleaned with moderately warm clean water to remove the debris and irrigated with potassium permanganate solution to further decontaminate and to reduce the edematous prolapse. The prolapse tissue was then gently repositioned. Thereafter, for retention purpose, a purse string suture was applied on the vulva mucosa using a nylon size 2 suture material, leaving 1-2 fingers space for urine to drain (Plate 4b). The animal was placed on Penicillin-Streptomycin 20/20 (Nanjing Vetop Pharma Co., Ltd) at 1mL/25kg intramuscularly for 5 consecutive days. Animal was closely observed for recurrence during the period and clinical parameters were also monitored.The suture material was removed on the 8^{th} day with no evidence of recurrence and the clinical parameters were found normal. The sheep lambed precisely two weeks after the correction of the vaginal prolapse.

Plate 3: Injection of epidural anaesthetic agent

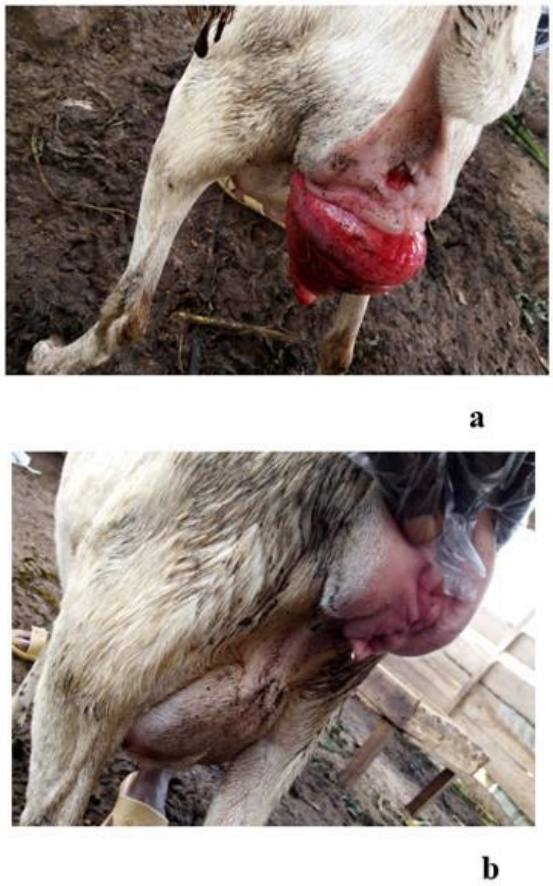

Plate 4 a & b: Before and after correction of the prolapsed tissue, purse string suture on the vulva leaving enough space for urine to drain (arrow).

III. DISCUSSION

Vaginal prolapse is one of the frequently encountered gynaecological conditions in farm animals. It is seen mostly in cattle, buffaloes and sheep during late pregnancy (Hasan *et al.,* 2017; Patra *et al.,* 2015) as observed in this report. The incidence of vaginal prolapse especially during the last trimester of the gestation period has been linked to numerous predisposing factors. The most probable explanation at this stage could be due to the spike in hormone level in preparation for parturition. Increase in levels of hormones such as estrogen and relaxin at the latter stage of pregnancy have been found incriminating (Wolve, 2009).These hormones are responsible for the relaxation of the pelvic wall and the surrounding structures which enhances fetal expulsion. However, this hormonal effect in combination with other factors such as increased abdominal pressure from multiple fetuses or large fetus predisposes the animal to vaginal prolapse. Nutrition and genetic factors have also been linked to the occurrence (Veeraiah and Srinivas, 2010). Therefore, history of change in feed as reported in this article cannot be ruled out to the incidence, as the prolapse was first noticed some days following abrupt change in feed. This habit may have partly led to increase abdominal pressure which among other factors contributed to this condition. This is similar to a report of vaginal prolapsed in cowfollowing change in feeding habit earlier documented (Hasan *et al.,* 2017).The clinical parameters recordedin this casewere unremarkable, ruling out the likelihood of toxemia or fetal death. Vaginal prolapse can hinder fetal expulsion especially if it coincides with the animal's due date causing dystocia and possibly fetal death. Toxemia and fetal death or abortion is a known complication of vaginal prolapse in ewes (Scott and Gessert, 1998).The prognosis is also dependent on the type of case and degree of damage (Yotov *et al.,* 2013). More so, it may not be correctable due to excess edema or fibrosis especially if treatment is delayed (Hasan *et al.,* 2017). In this report, epidural anaesthesia prior to replacement of the prolapsed tissue was found rewarding as the straining ceased after induction of epidural anaesthesia. It also enhances easy manipulation of the perineal region (Patra *et al.,* 2015). Decontamination of prolapsed tissue using mild potassium permanganate reduces edema (Yotov *et al.,* 2013) and prevents vaginal or uterine infection, eliminating possibility of septicaemia (Hasan *et al.,* 2017). Therefore, the success recorded in this report could be ascribed to prompt intervention, proper management and the postoperative monitoring.

IV. CONCLUSION

Vagina prolapse is a common condition in sheep frequently seen in late pregnancy. It is an emergency condition and the outcome of its correction depends on early intervention. Therefore, livestock farmers should promptly call the attention of their veterinarians once this condition is noticed. This is necessary in order to prevent complications which may result in economic losses. More so, farmers should avoid practices that may increase the susceptibility of animals to this condition.

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