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MANAGEMENT OF CERVICO-VAGINAL PROLAPSE IN A ZEBU COW USING STERILE PLASTIC CUT AS STENTS - A CASE REPORT

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ABSTRACT

A seven-year-old multiparous zebu cow was presented in a private dairy farm at Chelelaka village, Bishoftu town, Ethiopia, with a history of large genital prolapse. A detailed physical examination showed prolapse of the vagina and cervix without additional organs. Based on case history and physical examination, the cow was diagnosed with cervico-vaginal prolapse. Pre-operatively, the animal was maintained under caudal epidural anesthesia in lateral recumbency, and proper cleaning of the prolapsed mass was made using sterile saline. The mass was then manually repositioned into the pelvic cavity by pushing using pressure and the horizontal mattress retention suture was applied, passing the needle deep at the junction of the labia. The pieces of sterile plastic cut were used as stents on both sides parallel to the vulva. After one-month post-operation, the cow recovered successfully.

***Keywords*:** Cervico-vaginal prolapse, Cow, Horizontal mattress.

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1. INTRODUCTION

Cervico-vaginal prolapse (CVP) is defined as an eversion of the vagina along with the cervix and it is a very painful and serious emergency condition (Peter and King 2021). Although the exact etiology is unknown, many factors have been described for genital prolapse in cows and sheep (Boraktariya et al. 2017; Vaid et al. 2018) including higher intra-abdominal pressure, large peri-vaginal fat, hypocalcemia, dystocia, trauma or large intake of poorly digestible roughage, problems of vaginal conformation, and hormonal changes like increased estrogen in late pregnancy and in estrus (Kitessa and Terefe 2021). In addition to the above factors, in some cows, the extreme laxity of the perineum and vulva may prolapse immediately after parturition (Rasool et al. 2022; Pun et al. 2024).

In the literature, there are different treatment options for cervico-vaginal prolapse. Among these, the replacement of organs and the application of stay sutures such as Buhner's sutures (Fesseha and Kidanemariam 2020; Pandey et al. 2020). Alternatively, one study by Boraktariya et al. (2017) has reported the successful management of severely damaged recurrent cervico-vaginal prolapse through per vaginal ovario-hysterectomy. Besides the above, the caslick's suture, bootlace technique, horizontal mattress (halstead), and deep vertical mattress techniques were described as treatment options for cervico-vaginal prolapse in cows (Peter and King 2021; Zainuri et al. 2023). The present case reports the successful management of cervico-vaginal prolapse in a seven-year-old local zebu cow using sterile plastic cut as stents parallel to vulva.

2. CASE DESCRIPTION

A seven-year-old multiparous local zebu cow approximately weighing 200kg was presented in a private dairy farm in Chelelaka village, Bishoftu town, Ethiopia, with a history of large genital prolapse (Fig. 1). The owner complained that the cow gave birth to a live female calf one month ago. On physical examination, the cow was severely straining, and the prolapsed mass was found dirty, edematous and swollen. A detailed physical examination showed prolapse of the vagina and cervix without additional organs. The animal showed a continued straining. Based on history and physical examination, the case was diagnosed as cervico-vaginal prolapse and decided to be managed by manual replacement and application of the horizontal mattress technique by using pieces of sterile plastic cut as stents. Pre-operatively, the prolapsed mass was lifted upward above the level of the ischial arch and the mass was debrided, cleaned and washed with sterile saline. To reduce the swelling, the mass was washed with cold, normal saline several times (Fig. 2). Afterwards, bladder was emptied by uplifting the prolapsed mass for a few minutes. The cut rectangular strip was washed and disinfected before application.

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Fig. 1: Photograph showing a cervico-vaginal prolapse at presentation.

Fig. 2: Photograph showing the washing of cervico-vaginal prolapse with a cold normal saline.

3. SURGICAL MANAGEMENT

After restraining of the cow in a lateral recumbency, a low caudal epidural anesthesia was performed using 2% lidocaine HCl (2% lidocaine hydrochloride, Jeil Pharma. Co. Ltd., Korea) at 0.6mg/kg in the first inter-coccygeal space. During repositioning, the assistants gently lifted up the hip of the cow, and ventral support was made from a bale of teff straw. The mass was repositioned into the pelvic cavity manually by pushing from the lateral side and then in the middle and dorsal using pressure with the arm-length gloved fist. To prevent the recurrence, the horizontal mattress retention suture was applied, passing the needle deep at the junction of the labia with the skin through the vulva lip on the right, and then the left vulva lip was passed at the same depth as the right using a large cutting needle threaded with silk size 2-0. The pieces of sterile plastic cut (Fig. 3) were used as stents on both sides parallel to the vulva, and approximately two finger spaces were left for urination. Post-operatively, the cow was administered with a broad-spectrum antibiotic (10% oxytetracycline injection, Chongqing, China) and treated with diclofenac sodium (Reyoung China) for three consecutive days. Eventually, the cow's owner was advised to keep the animal in stall feeding, and the suture material and plastic cut were removed after 15 days post-operation. After one month follow up, the cow recovered successfully (Fig. 4).

Fig. 3: Photograph showing the application of retention suture using a pieces of sterile plastic cut (blue arrow) as stents.

Fig. 4: Photograph showing the cow recovered from cervico-vaginal prolapse.

4. DISCUSSION

Genital prolapse in large ruminants, including cervico-vaginal prolapse, is an emergency reproductive disorder that should be managed immediately before further complications that can lead to economic loss to the farmers (Kitessa and Terefe 2021; Rasool et al. 2022). The delay in treatment of cervico-vaginal prolapse may lead to necrosis, and laceration (Kitessa and Terefe 2021), fatal hemorrhage (Fesseha and Kidanemariam 2020) and the development of septicemia (Vaid et al. 2018). In the present study, a horizontal mattress technique using pieces of sterile plastic cut as stents on both sides was found to be highly effective in preventing the recurrence of the prolapse. This finding agrees with the report by Peter and King (2021), who stated that using polyvinyl chloride

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tubes cut to the length of the vulva and holes drilled or latex tubes that can be used as stents in either side of the vulva and tied to horizontal mattress results in a high benefit and evenly distributes suture pressure. However, the disadvantage of this technique is the slight development of vulva swelling and damage to the vulva while passing a large cutting needle. Similar post-operative clinical findings were recorded in the present case.

An excellent review by Miesner and Anderson (2008) has described that the position of the cow can benefit the reposition of prolapse. The authors mentioned that the best positioning of a cow is sternal recumbency, with the pelvic limbs stretched out behind the cow. However, this position predisposes animals to coxo-femoral luxation. Besides, lifting the hip or sufficient draping of the quadriceps with soft bedding allows for easy repositioning of the mass in a laterally recumbent cow. This report agrees with the current findings, in which the cow was positioned in a left lateral recumbency, the assistants gently lifted up the hip of the cow, and ventral support was made by a bale of teff straw. But, managing the prolapse in the standing position needs support devices (Hopper 2007).

5. CONCLUSION

In the present study horizontal mattress technique using pieces of sterile plastic cut as stents on both sides of the vulva was found effective and suitable in the treatment of zebu cow suffering from cervico-vaginal prolapse.

Author's Contribution

This work was carried out in collaboration between both authors. Jiregna Dugassa Kitessa did conceptualization and supervision of the study. Ufaysa Gensa Geraro wrote original draft, reviewed and edited the manuscript. Both authors read and approved the final manuscript.

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