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Handling and therapeutic management of uterine prolapse in a cow

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Abstract
The present case reports the handling and management of uterine prolapse in a 8 years old pluriparous cow suffering from uterine prolapse presented at Teaching Veterinary Clinical Complex, College of Veterinary Sci & AH, DSVCKV, Durg, Chhattisgarh. Just after five hours of delivering a live female calf, the cow developed prolapse of uterus. The animal was in lateral recumbency with extended legs and whole prolapsed mass was soiled with dirt and straw. Due to inflammation the prolapse mass was swollen, edematous and lacerated specially at the carbuncular areas. Clinical observation indicated rapid and weak pulse, and respiration and congested mucus membrane and continuous straining was seen Under caudal epidural anaesthesia, the mass was relocated using the conventional method. Satin Ribbon was a successful suture material for a modified Buhner's procedure that retained the prolapsed mass in the cow. There were no complications or deformities of vulvar area. After administration of supportive medications for the subsequent seven to eight days, the cow gradually recovered and showed no evidence of a prolapsed mass hanging out of the vulva.

Keywords: Uterine prolapse, recumbancy, epidural anaesthesia, modified Buhner's suture

Introduction
One of the most common problems of postpartum in cattle and buffalo is uterine prolapse, which necessitates prompt medical attention in order to preserve the animal's life, health and fertility. It is a dairy animal postpartum problem that happens right away after calving, though it can also happen a few days later. When the gravid uterine horn folds over during the post-calving stage and protrudes from the vulva, it is called a uterine prolapse. Other names for it include "eversion of uterus" and "calf bed". According to Seth (1970) and Ahmed *et al.* (2005), genital prolapse is a serious but uncommon reproductive condition in cattle and buffaloes. Prior to severe edoema, mucosal trauma, pollution, and fatalities, it is regarded as an emergency situation that needs to be addressed.

In order to avoid severe edoema, mucosal trauma, contamination, and lethal haemorrhage, which would have a bad prognosis, it should be treated as an emergency condition (Miesner and Anderson, 2008) [8]. Although antepartum vaginal prolapse is thought to be primarily caused by a high oestrogen level (Roberts, 1998) [15], the precise cause of uterine prolapse is still unknown (Noakes *et al*., 2001) [10]. (Odegaard, 1977; Murphy and Dobson, 2002; Roberts, 2004) [12, 9, 16] Hypocalcaemia causes myometrial exhaustion and thus slows cervical involution, both of which may increase the risk of uterine prolapse. Another etiological component that has been implicated is forced foetal extraction (Noakes *et al*., 2001) [10]. The animal is under a lot of stress as a result of this condition. Cases that go untreated could progress to deadly septicemia (Bhattacharyya *et al*., 2007) [2].

Transvulvar suturing techniques are used to hold the prolapsed mass after proper reduction (Noakes *et al*., 2001; Roberts, 2004; Bhattacharyya *et al*., 2007) [10, 16, 2]. However, they are prone to tear the vulva, especially in cases showing subsequent violent straining (Noakes *et al*., 2001) [10]. Buhner's subcutaneous perivulvar suture application using vetafil or umbilical tape is presently the most popular method. Vetafil is relatively expensive in field settings, and sterile umbilical tape is not always accessible. The incidence and clinical profile of cows with vaginal prolapse are not sufficiently covered in the literature. Thus, the goal of this study is to document the specifics of cow uterine prolapse therapy.

Case history & clinical observations

A 8 years old pluriparous cow having post parturient uterine prolapse presented at TVCC Veterinary College Anjora, Durg C.G with the history of unassisted calving. A apparently healthy female calf was born 5 hours before the occurrence of uterine prolapse. The total uterus and its content were prolapsed out from the vulva of the cow. The animal was in lateral recumbancy with extended legs. Whole prolapsed mass was soiled with dirt and straw. Due to inflammation, the mass was swollen, edematous, lacerated specially at the caruncular areas. Clinical observation included rapid and weak pulse and continuous straining were observed. On physical examination, temperature 39.9ºC, heart rate 126 beats/min, respiratory rate 79 cycles /min were recorded. The mucous membrane of eye was congested following normal sheding of fetal membrane.

Therapeutic management

To avoid straining while repositioning the prolapsed organ, 10 ml of 2% lignocaine solution was injected into the sacrococcygeal vertebrae to establish epidural anaesthesia. Needlesticks were used to test the sensitivity in the perineal area after waiting 10 min for the anaesthetics to take effect. The prolapsed uterus was cleaned with a warm, diluted chlorhexidine solution after the dirt and dung elements were gently removed. Debridement was done in the necrotic areas. The two hind limbs were then extended out behind the animal while it was in sternal recumbency.

The prolapsed uterus was then delicately pushed in through the vagina using both hands and a modest amount of power. The uterine horns were then put inside after the repositioning of uterine body. As a retention procedure to keep the uterus in place, the buhner's suture with sterile ribbon was applied in the vulva. The animal was given fluid therapy with Inj. DNS 1800 ml/day along with Inj. Calcium borogluconate 450 ml/day, antibiotic Inj. Ceftiofur @ 2mg/kg b. wt, Inj. Oxytocin 15 IU I/M, anti-inflammatory & analgesic (Inj. Meloxicam) 15ml I/M, antihistaminic (Inj. chlorpheniramine maleate) 10ml I/M. For three days, the same course of treatment was followed, except Oxytocin and Calcium borogluconate injections. After a week, the vaginal sutures were taken out. The animal recovered with fair prognosis, good milk production and its fertility was found to be near normal.

Discussion

Non-heritable uterine prolapse is typically linked to hypocalcemia or forcible foetal evacuation. According to Richardson *et al*. (1981) [14], animals with uterine prolapse either attainin sternal or lateral recumbency. According to one study, younger (2 to 4 year old) animals are more likely to experience uterine prolapse (Richardson *et al*., 1981) [14]. In a research involving beef cattle, primiparous dams accounted for 40.3 and 82.8% of uterine and vaginal prolapse, respectively. According to Noakes *et al*. (2001) [10], prolapse of the uterus typically occurs during the third stage of labour, when the foetus has been evacuated and the foetal cotyledons have detached from the maternal caruncles. Repositioning the organ and then finding a way to keep it there are the two main necessary goals in the treatment of uterine prolapsed.

Animals with uterine prolapse need to have a thorough clinical examination since metritis might present with symptoms of toxaemia such as tachypnea, inappetence, elevated pulse, and congested mucous membranes. The likelihood of an infected prolapsed mass is also increased by vascular impairment, trauma, and faecal contamination. But after soaking in a warm, diluted antiseptic solution, it is usually successful to remove these materials with care, resulting in very mild capillary bleeding. Strong efforts to eliminate surface contamination should be avoided as they may increase toxin uptake and be ineffective (Scott and Gessert, 1998) [17]. Before replacing a uterine prolapse, a caudal epidural anaesthetic is necessary because it lessens tension and desensitizes the perineum. The animal may be in a standing or lying down position to replace the uterine prolapse (Hanie, 2006) [6].

The operator's fingers should be put at the tips of both uterine horns after the uterus has been reinstalled to ensure that there are no residual invaginations that could cause abdominal tension and subsequent prolapse (Fubini and Ducharme, 2006) [5]. The prolapse is unlikely to occur again if the uterus is entirely and completely replaced up to the tips of the uterine horns (Hanie, 2006) [6]. In this study, straightforward manual techniques for addressing uterine prolapsed challenges were introduced. By using physical pressure while protecting the vulval lips, the prolapsed uterus was forced into the vagina. To boost uterine tone when the uterus has returned to its natural position, 10 IU of oxytocin was intramuscularly injected. Additionally, according to Fubini and Ducharme (2006) [5], the majority of animals with uterine prolapse had hypocalcemia.

Animals with hypocalcemia should consequently be administered calcium borogluconate when symptoms are identified. After replacing the prolapsed organ, a broad spectrum injectable antibiotic was given for five days to stop the spread of microorganisms (Borobia-Belsue, 2006; Plunkett, 2000) [4, 13]. Animals with uterine prolapse who get the right care can become pregnant again without any issues. When infections, necrosis, and lacerations are present or when treatment is postponed, complications can arise. A prolonged prolapse may result in shock, haemorrhage, or thrombosis (Noakes *et al*., 2001) [10]. By forcing fluids out of the uterus, osmotic agents like sugar or salt applied topically may minimise or prevent edoema (White, 2007; Miesner and Anderson, 2008) [20, 8]. However, these agents may potentially aggravate endometrial damage.

Fig 1: Post parturient uterine prolapsed mass before replacement

Fig 2: Application of Buhner's suture technique

Fig 3: After reduction, reposition and replacement of prolapsed masss

Conclusion

An efficient alternate method is manual massaging while moving the mass after applying an ointment or lubrication (Younquist, 1997) [21]. In the current investigation, Buhner suture was used in conjunction with reduction, replacement, and repositioning procedures to successfully retain the prolapsed mass. In these situations, elevating the uterus straightens the urethra sufficiently to permit urination, enhancing cow comfort and minimising subsequent straining (Miesner and Anderson, 2008) [8].

In this study, the modified Bruhner's technique has several advantages over the traditional Bühner's technique, including: i) enough room (between the suture knot and the ventral vulvar commissure) for urination without difficulty; ii) no need to create and suture the incisions above and below the vulva; iii) the suture can be loosened and reapplied by the owner himself, as and when required; and iv) quick application with no additional man power and instruments requirement, and v) it does not lead to anatomical disfigurement or physiological defects in the vulvar area.

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