

EFFECTIVENESS OF MODIFIED BUHNER'S TECHNIQUE USING INFUSION (DRIP) SET TUBING IN COWS SUFFERING FROM PROLAPSE

H. K. BHATTACHARYYA, B. A. BUCHOO AND M. R. FAZILI

Teaching Veterinary Clinical Complex,
Faculty of Veterinary Sciences & Animal Husbandry,
Shuhama, Alusteng, Srinagar - 190 006 (J&K).

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ABSTRACT

Thirty four cows presented for the treatment of prolapse (uterine, 19 and vaginal, 15) were included in this study. The prolapsed mass was replaced following standard technique. Modified buhner's suture was applied using sterile infusion set as suture material. It resulted in persistent retention without recurrence in all the cows. Complications and disfigurement of the vulva was not noticed even in cases where suture was removed after a prolonged period.

Keywords : Modified Buhner's technique, Infusion set tubing, Vaginal prolapse, Cow

The incidence of prolapse of the reproductive tract in cattle ranges from 1-2% (Woodward and Jr. Quesenberry, 1956 and Patterson *et al.*, 1981). Primiparous animals are mainly affected (Anonymous, 2008). This condition places considerable stress on the animal. Delayed cases may be fatal due to the development of septicemia (Bhattacharyya *et al.*, 2007). Several methods to manage these cases have been described ((Roberts, 1971; Noakes *et al.*, 2000; Bhattacharyya *et al.*, 2007 and Anonymous, 2008). The present article reports the management of prolapse of reproductive tract by a 'modified' Buhner's technique using an unconventional type of suture material.

Thirty four cases of prolapse (19 uterine and 15 vaginal) in cattle were included in the present study. Vaginal prolapse were common during pregnancy (4-9 months) and uterine prolapse following parturition. All the cases were managed as per the following techniques. Analgesia was induced using 2% lignocaine hydrochloride (5-10 ml) as caudal epidural block. The prolapsed mass was rinsed thoroughly with KMnO₄ solution (1:1000) and replaced carefully after holding it up with lubricated gloved hands and pushing into the cow's pelvis following the standard procedure. In cases of uterine prolapse rotation of the uterus was avoided to prevent development of torsion. Buhner's suture was then applied around the vulva using a sterile infusion (drip) set as suture material.

Unthreaded Buhner's needle was introduced on one side of the vulval lip (2-3 cm away from vulval margin

and 2-3 cm dorsal to the ventral commissure) in the upward direction without piercing the vulval surfaces. The tip of the needle emerged in mid area between anus and vulval opening. Then a sterile infusion set tubing was inserted through the hole of the needle. The threaded needle was pulled out of the insertion point. After disengaging the needle it was reinserted in the same direction on opposite side of the vulva keeping similar distances from the corresponding vulval edge and its tip pushed out through the previous hole above the dorsal commissure. The needle was threaded with the free end of the infusion set hanging from the cutaneous hole above the dorsal commissure. Needle was then pulled out and disengaged. Thus the free ends of the infusion set tubing came out through two openings near ventral vulval commissure. Now a slipping knot (Fig.) was applied and tied firmly. A gap for urination remained towards the lower vulval commissure ventral to the tied knot. Calcium borogluconate 25% (200-400 ml) intravenously and a course of antibiotic intramuscularly was administered after application of suture. In cases suffering from vaginal prolapse during advanced stages of pregnancy the stitch was retained until parturition, and the owners advised to carefully loosen the knot without pulling the material out at the time of parturition and reapplication of the knot after parturition to prevent recurrence. However, immediately after parturition in 4 out of 9 cows vaginal or uterine prolapse recurred. In such cases the prolapsed organ was again replaced and a slipping knot applied to the intact infusion set tubing around the vulva. The tubing

was maintained in these cows for 2-3 months and removed only around 20 days after parturition.

In the standard Buhner's technique two incisions are made, one below the ventral commissure and the other above the dorsal commissure of vulva, through which needle is inserted subcutaneously from lower one to upper one and then from upper to lower on the opposite side. Consequently both the free ends of the suture material come out through the lower incision. A knot is applied with the free ends of the suture material leaving a 3-4 finger space for urination. After completion of suture the skin of both the incisions are sutured. However, in the present study needle was inserted through two different spots 2-3 cm above the ventral commissure away from the vulval lips to create a gap between visible knot and ventral commissure of vulva for urination. Advantage of this modified technique is the surety of sufficient space left for normal urination. Moreover there is no need to suture the incisions below and above the vulval area. The knot can thus be untied and retied as and when required.

Infusion set tubing used in this study was found advantageous over other traditional suture materials (*viz.* Vetafil, Umbilical tape, Finlayson thread etc) used routinely (Roberts, 1998; Noakes *et al.*, 2000 and White, 2007) in following ways. (a) It is easily available in a 'sterile' pack. (b). Absence of any capillary action and thus no infection is carried into the subcutaneous tissues. (c). Absence of development of fibrosis and/or adhesions in surrounding tissues due to slippery and synthetic nature of tubing. (d). It maintains sufficient strength to prevent recurrence of prolapse of genitalia. (e). The stretchability and wide diameter does not cause tearing of vulva unlike some suture materials like Finlayson (White, 2007). The technique is less time consuming and can be accomplished with minimum man power requirement. Intravenous use of calcium borogluconate at the completion of suture application helps to correct the hypocalcaemia generally occurring simultaneously in majority of prolapsed cows (Richardson *et al.*, 1981).

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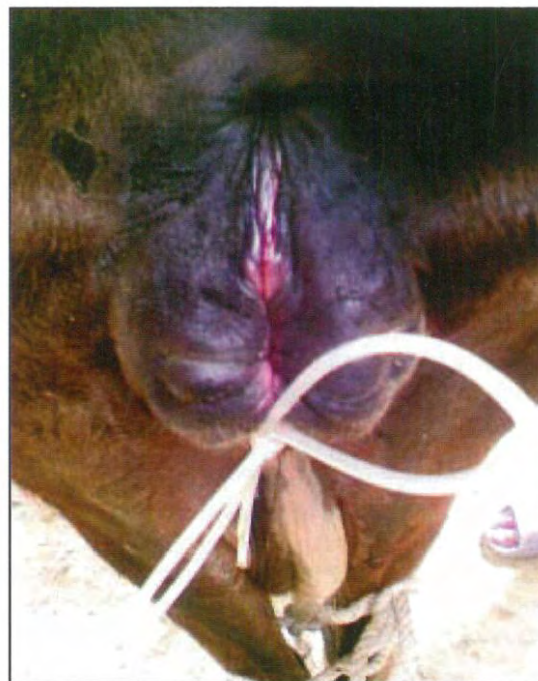


Fig. - Slippery knot fixed at lower side of both vulval lips