

Handling of Prolapse of Genitalia in Bovines

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Introduction

The prolapse of genitalia could be prepartum or postpartum where a portion of the genitalia is dislocated posteriorly. This is an important clinical condition with serious implications on production and reproduction. The incidence of reproductive tract prolapses in cattle ranges between 1-2% (Yotov *et al.*, 2013). Uterine prolapse occurs sporadically, dairy cattle appear to be more frequently affected than beef cattle (Kumar, et al., 2018). It can be cervico-vaginal prolapse in pregnant animals or complete uterine prolapse at the time of calving or in the immediate postpartum period. Among the possible etiological factors for its occurrence, besides heredity, deficiency of minerals, oxidative damage to the tissues and endocrine alterations leading to relaxation of perenium are the important causes. Excessive straining by the animal or pulling the retained fetal membranes can induce uterine prolapse. Success of treatment depends upon the severity of condition and associated complications like urinary tract infections. Earlier is the treatment given, better is the response.

Three important steps in handling a case of prolapse of genitalia are reduction, repositioning and retention of the prolapsed mass.

Reduction in the size of prolapsed mass

a) Drainage of urine

Due to prolapse of vagina a kink develops in the urethra, that leads to retention of urine in the urinary bladder. This increases the size of the prolapsed mass. Thus, drainage of urine will often reduce the size of the prolapsed mass. Simply lifting the prolapsed mass upward straightens the kink in the urethra and releases the retained urine. Alternatively, it can be drained by using urinary catheter.

b) Reduction of edema

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Due to occluded blood supply, the prolapsed mass develops edema. Lifting the prolapsed mass above the level of ischial arch can reduce this edema. Cold water, ice packing or applying hypertonic sugar solution on the prolapsed part can further reduce it. The local administration of oxytocin in the uterine musculature in the uterine prolapse will also reduce the size of the prolapsed mass.

Repositioning of the prolapsed mass

Repositioning of the genitalia is always done under epidural anesthesia. Slight lifting of rear parts of the dam will help in easy repositioning. After epidural and evacuation of the bladder, thoroughly clean the prolapsed mass with weak Candy's lotion or mild detergent and water so as to remove all the dirt, dung or straws sticking to the mass. This helps reduce irritation to the tissues and is an important step for successful treatment of prolapse. Before reposition of the prolapsed mass, tears or lacerations if any should be properly sutured. Apply antibiotic and anesthetic ointments on the prolapsed mass to control straining and check the local infections. This also lubricates the tissue and will help easy repositioning. Start repositioning from the lateral walls, then the middle portion followed by roof of vagina and straighten the organ. *While reposing the mass, do not put pressure with the fingertips, instead use the palm to put pressure.* In cases of uterine prolapse, putting the arm in the uterine lumen or filling the saline in the uterine horns should ensure complete straightening of the uterine horns. Make sure that most of the infused fluid is drained out.

Retention of the prolapsed mass

A number of methods are used for retaining the prolapsed mass such as rope truss, Buhner's sutures, Flessa sutures, winklers technique, reefing operation, modified quill technique, pudendral neurectomy etc. Retention along with supportive therapy ensures that the tissue regains strength and occupies its original position.

1. Rope Truss

Take a 30 feet long rope. Double it and make an 8-knot on the loop side at a distance of 2-3 feet. Adjust it around the neck of the animal. Put another 8-knot at the hump region. 3rd, 4th and 5th knots are put at the level of last rib, sacrum and on the base of tail, respectively. 6th and 7th knots are placed at the dorsal and ventral commissure of the vulva. The free ends of the rope are passed below the hind limbs on the sides of the udder and tied in front of the tuber coxae as a quick releasing knot. The knot below the ventral commissure of vulva is most important as it puts pressure on the part to retain it.

Precautions

- Always use a cotton rope and never use the jute or nylon rope for making truss.
- Avoid too much pressure on the vulvar lips and open the knot at the time of delivery.



- The part of rope around the vulvar lips should always be bandaged/covered so that the rope does not cut through the vulvar tissue.

2. Buhner's sutures

These are applied under epidural anesthesia with a special needle, the Buhner's needle. An incision on the skin is made 1-inch below the ventral commissure of vulva. Thoroughly sterilized Buhner's needle is passed below the skin at a distance of 2-inches from the vulvar lips towards the dorsal commissure of vulva and taken out between anus and the dorsal vulvar commissure. Here the skin may also need a small incision. A nylon ribbon, umbilical tape or bandage (about two feet long) dipped in antiseptic solutions like povidone iodine (Betadine), is passed through the eye of the needle and the needle is withdrawn from the same tract. Then pass the needle on the other side of vulvar lips from the same ventral incision and bring out of the same dorsal incision. The free end of tape is loaded into the eye and the needle similarly withdrawn. This forms an encircling sub-cutaneous stitch around the vulvar lips. Finally, an easy release knot is tied at the ventral commissure keeping a gap of 4 inches between the dorsal and ventral commissure of vulva. This puts a uniform pressure on vagina and helps retain the prolapse. It does not obstruct regular flow of urine and prevents vulvar edema. Occasionally if edema develops, slightly loosen the knot. This will prevent venous congestion and establish normal blood circulation.

Buhner sutures can be kept for up to two weeks if the incision site remains clean.

3. Flessa Sutures

These are specially designed sutures consisting of three metallic rods, two holed aluminum strips, six wooden beads and a Flessa needle. After fixing a wooden bead and passing through the aluminum sheet, the metallic needles are passed through the skin at the level of the base of the vulvar lips and through vestibule with the help of Flessa needle. These are secured with the aluminum strip and tightened with wooden beads on the other side. Since mucosa of vagina is damaged, infections can settle in. Many obstetricians prefer Flessa sutures over Buhner's sutures.

4. Robert's vulvar sutures

These are similar to Flessa sutures but the beads are metallic instead of wooden beads. These are similarly applied as Flessa sutures.

5. West's prolapse clamps

These are metallic clamps having sharp needles and are fixed around the vulvar lips. The required pressure can be adjusted as per the requirements with the help of a screw at the base of the clamp.

6. Winkler's technique



In this technique using a U-shaped or an S-shaped cutting needle and silk thread, the cervix is secured with the prepubic tendon. This technique is very helpful in chronic cases of prolapse of genitalia that do not respond to other treatments.

7. Pudental neurectomy

Pudental neurectomy will stop the straining, however it can lead to atrophy of the muscles supplied by it. Hence, it is not a routinely adopted technique.

Supportive therapy

The cases of genital prolapse need supportive therapy with intravenous fluids, intra-venous calcium, antibiotics, anti-histaminics, analgesics and anti-oxidants. In some cases, with incomplete gestation, progesterone treatment may help as progesterone competes with the estrogen for the steroid receptors and lowers the effects of estrogen. The cases with continuous tenesmus do not respond favorably to conventional treatments. Therefore, checking of straining (through sedation or epidural anesthesia with long-acting drugs like bupivacaine, 4.0 ml of 0.5% solution, or xylazine @ 0.05 mg/kg), daily dressing after cleaning of vagina and other medicinal treatment proves helpful in successful treatment. In delayed chronic cases, urinary tract infection is a regular finding. Hence, in the presence of painful urination, urine culture and sensitivity-based antibiotics must be administered.

Treatment in one pregnancy does not prevent its reoccurrence in the next gestation.

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