

## Comparative Efficacy of the Therapeutics of Recurrent Genital Prolapse in Indigenous Cows

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### ABSTRACT

The indigenous cattle breeds are considered much more resistant to various ailments, and therefore, possibly requiring lesser medication compared to exotic or crossbreeds. The objective of the present study was to compare efficacy of the general therapeutics of uterine prolapse in indigenous breeds. The present study reports six cases of recurrent prolapse in non-pregnant indigenous cows with multiple parity. The treatment included epidural anaesthesia, cleaning and reposing of prolapsed mass, setting followed by progesterone injection and supportive therapy inclusive of antibiotics, analgesics, antihistaminic and I/V fluid. Incidence of recurrence of uterine until 72 hour and period of recovery from the day of administration of treatment till at least 50% involution of the organs, ascertained by rectal examination, were recorded. It was concluded that general therapeutics of uterine prolapse is equally successful in indigenous cows as well with recovery period and incidence of recurrence being much less than crossbreeds.

**Keywords:** Indigenous cows, genital prolapse, progesterone, epidural anaesthesia

Prolapse of vagina, cervix and/or uterus is a disorder of ruminant occurring normally in the late gestation or post-partum. Rarely does it occur unconnected with pregnancy or parturition. It can be recognized by protrusion of varying parts of vaginal wall and cervix or varying portion of uterus. The severity varies from slight and intermittent protrusion of the floor of vagina, to the severe and permanent protrusion of the vagina and cervix (Noakes, 1997) or either one or both horns along with body of the uterus. The primary predisposition to occurrence of prolapse in cattle is elevated plasma estrogen concentrations during late gestation and the contributing factors are pluriparity, obesity (extensive deposition of

retroperitoneal fat), oversized foetus, twinning, mineral imbalance, increased intra-abdominal pressure (due to high roughage feeding), loosening/weakening of vaginal musculature, urinary infection, vaginal trauma/contusion and occasionally hilly and undulant terrain. Also, aged cattle and cows with *Bos indicus* ancestry and beef breeds particularly Hereford, Simmentals and Charolais are reported to be more prone to show prolapse (Drost, 2007; Noakes, 2009). It is also believed to be self-perpetuating since as the prolapse develops, the mucosa becomes progressively more dehydrated, devitalized, traumatized and infected, thus further stimulating the cow to strain (Noakes, 1997). However, the exact cause of the disorder

has not been ascertained and the above factors are generally believed to play a contributing part (Noakes, 2009). The prognosis of genital prolapse depends on its severity, duration of the condition before treatment was commenced and on whether the organ has sustained massive injuries. In many cows recurrence of the prolapsed mass following repositioning is itself a major concern. Though the therapeutics of the genital prolapse is fairly standardized in the cross breeds, its application and the utility in preventing its recurrence, particularly in the indigenous breed, remains to be validated. The objectives of the present study, therefore, was to evaluate efficacy of the general therapeutics in the management, and prevention of recurrence of uterine prolapse in indigenous cows.

#### **HISTORY AND OBSERVATION**

Six indigenous cows were presented with the history of parturition at almost three to five months before followed by post-partum uterine prolapse of recurrent nature at Panchayati Gaushala, Hapur. The management of the Gaushala reported that the prolapsed mass in all the six cows was treated on regular basis by a para-vet but it reappears after cessation of the treatment in a week or so. The animals were eating well but the milk yield was considerably low. All the six animals were examined and the prolapsed mass was found entirely soiled with dung, soil and dirt. There were lacerations, swelling, hemorrhage, necrosis and intense redness all over the prolapsed mass. Three animals were showing severe continuous straining while the other three had mild straining. The temperature, pulse rate and respiration rate in all the six animals were recorded and found to be normal.

#### **TREATMENT AND DISCUSSION**

Before commencement of the treatment all the six cows were restrained in standing position. The cows were given caudal epidural anesthesia by infiltrating 5-7 mL of 2%

lignocaine hydrochloride solution using 5cm long 18-gauge needle at the middle of the first inter-coccygeal space. This was necessitated to obviate straining during replacement of the prolapsed organ. The inter-coccygeal space was located by raising the tail in 'pump-handle' fashion to identify the first articulation behind the sacrum. Replacement of the prolapsed mass was undertaken 7 to 10 min after the local anaesthetic injection. Sensitivity loss around the perineal region was assessed by pinching the tail. The presented cases were treated with the three 'R' theory that is reduction, reposition and retention of prolapsed mass. The urine was drained by raising prolapsed mass above the ischial arch and in two cows with the use of urinary catheter.

After complete dribbling of the urine, the size of the prolapsed mass was reduced partly. All the debris, dung and dirt were gently removed by pouring on cold tap water and gentle rubbing with a sterile cotton gauge. The necrotic area was debrided. Final washing of the prolapsed mass was carried out with 1% potassium permanganate mixed water and ice packs were applied to reduce swelling. 2% lignocaine hydrochloride gel was thereafter applied over the complete mass. The everted mass was then dusted with an antiseptic powder. Subsequently the mass was replaced gently and gradually with the palm of the lubricated gloved hand, being careful not to cause trauma to the exposed fragile tissue. The entire perineal region including the vulvar lips were then disinfected with 70% alcohol. Consequently, the cows were administered exogenous progesterone (500 mg hydroxyprogesterone, I/M) weekly twice for two weeks and supportive treatment with ceftiofur antibiotics (2.2 mg/kg body weight I/M), anti-inflammatory analgesic meloxicam (0.5 mg/kg body weight I/M), antihistaminic chlorpheniramine maleate (0.5 mg/kg body weight I/M), and I/V fluid therapy (Calcium borogluconate 450 mL/day). The treatment was continued for three days except calcium borogluconate and long acting antibiotic. The

management of Gaushala was advised not to overfeed the animals.

Pathogenesis and development of the genital prolapse is mostly progressive and it starts with the exposure of some of the vaginal mucous membrane. The prolapsed mass moves in and out as the cow gets up and lies down. Bare mucous membranes dry out and become irritated, leading to straining and further exposure of the mass. The prolapsed tissues become edematous which may lead to impaired blood circulation and progressive swelling. Over the period of time, the prolapsed mass becomes more oedematous, drawing out more and more of the internal genital organs. Sometimes both the horns including body of the uterus protrudes out, occluding urinary meatus and consequently flow of the urine. If untreated, it becomes highly susceptible to mechanical injury, tearing and environmental contamination that may lead to laceration, haemorrhage, tissue necrosis, bacterial contamination, urinary incontinence, stress and shock. Eventually the cervix and sometimes the bladder may also be engaged further aggravating the condition.

All the six cows in the present case had normal feeding after 3-4 h post-treatment. They became fit and did not show recurrent prolapse up to 72 h or beyond. On an average, the prolapsed organs regained 50% of the original shape and size by 6-10 days from the day of start of the treatment: on an average, uterus halved in shape and size by day 3 and 9, respectively, cervix halved by day 13, lochial discharge disappeared by day 2. These parameters are much less in these indigenous cows compared to published report of genital involution in cross breeds and exotic animals. The normal cyclicity was regained within 2-4 months in four of six cows. Cervico-vaginal prolapse in cows is often a chronic, recurrent and hereditary pre-partum disease (Bhattacharyya *et al.*, 2012) while uterine prolapse in cows is observed immediately after parturition, however in the present cases all the cows were in remission with parturition.

It was observed that the animals showed recurrent prolapse as they were given bulky feed and all the six cows had distended rumen. This is in agreement with earlier workers where such type of condition appears either during the winter when cows are on poor quality hay or in the spring when lush pastures with high water contents results in cows filling themselves greatly (Noakes, 2009).

In the present study the animals were successfully treated with exogenous progesterone therapy along with supportive medications. Also, a caudal epidural block using lignocaine hydrochloride (2%) was effective in controlling straining and provided satisfactory regional analgesia in indigenous cows. Manual massaging during repositioning of the mass after application of an ointment or a lubricant was also found to be an effective alternative procedure as stated by other workers (Younquist, 1997).

Exogenous progesterone administration also helps in neutralizing the excess estrogen in the circulation (Bhattacharyya *et al.*, 2012). Use of calcium supplementation also helps to correct the hypocalcaemia occurring simultaneously in the majority of prolapsed cows. It has been recommended along with a course of parental antibiotic, even if the animal does not show clinical signs of hypocalcaemia (Noakes, 2009).

From the present study it was concluded that indigenous cows with recurrent prolapse could be managed by a combination of caudal epidural block, exogenous progesterone therapy and supportive treatment, with lower chances of recurrence. This therapeutic regimen may be tried under field conditions in indigenous cows before application of temporary retaining sutures in non-pregnant animals.

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